# ROTUNDA

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Indians and Anthropologists

Collecting Gemstones in Ontario

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# ROTUNDA

*the magazine of The Royal Ontario Museum*

*Volume 10, Number 4, Winter 1977/78*

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# *On the Three Graces*

**K. Corey Keeble**

Antoine Louis Barye is one of the best known of all 19th-century French sculptors and the dominant figure among the so-called *animaliers*, sculptors who concentrated their attention on the depiction of animals. Barye studied with the classicist Bosio and with the Romantic painter Gros, both of whom provided him with elements which were later to become the basis of his own stylistic development. He also worked for a time with the goldsmith Fauconnier, and actively carried out studies of animals in the Paris Zoo. In 1831, he exhibited a group, *Tiger Devouring a Crocodile*, that became the sensation of the Paris Salon of that year. Barye's sculptures, rippl'ng with movement and tense with energy, provided a three-dimensional equivalent to the powerful forms created in painting by Theodore Gericault (1791-1824), one of the foremost apostles of the Romantic Movement which revolutionized French art in the early years of the 19th century.

Barye's work brought a new dimension to sculptures of lions, bulls, and eagles, subjects popular from the days of classical antiquity and revived during the Renaissance and Baroque periods. His justly famous "hunt" groups included also depictions of the human figure; for although Barye is best known for his sculptures of animals, he did not neglect the human figure in the formulation of his art, and produced in this context a series of bronzes which are among the most striking examples of the human figure in bronze of the post-Renaissance period, and in which he brought to fruition the classical training he had received from Bosio.

While some of Barye's allegorical figures are strongly classical and show influences drawn from Antique figures of heroic type, others are more naturalistically conceived. For Barye showed a distinct interest in the sculpture of the Renaissance and it is in the context of this interest that we encounter some of his most adventurous forays into the representation of the female figure, such as his group of the *Three Graces*, of which one version has been recently acquired by the European Department of the ROM. With the *Three Graces*, Barye has moved away from the classical idiom and has more

closely approached a favourite Renaissance type, with added elements derived from Mannerism. The subject of the *Three Graces*, while of classical origin, played an unusually important part in the history of French sculpture, for it was just such an allegorical group, derived from an engraving by Marcantonio Raimondi, that served as the inspiration for one of the best known of all French Renaissance sculptural groups, that of the *Three Graces* designed and executed by Germain Pilon between 1560 and 1563 to support the urn containing the heart of Henri II.

Pilon faced his Graces outwards; Barye turned them in, using a pose which is reminiscent of an octagonal painting of the Graces exhibited by J.B. Regnault at the Salon of 1799. The proportions of the figures, their elongation along the torso, and the contrived postures, however, recall Italian and French Mannerism of the 16th century, evoking images of Parmigianino and Primaticcio. There is a quasi-Florentine elegance in the sway of the bodies and the bend of the legs which recalls, however distantly, the work of Giovanni Bologna. The treatment of the three figures accords in some respects with other details of Barye bronzes depicting the human figure. This is most notable in the treatment of the coverings over the heads which have the same stylized arrangement of lines in parallel sequence which Barye used in detailing the head of his bronze Theseus in the group of *Theseus Slaying the Minotaur*, and there is also a certain classical repose in the features analogous with his allegorical bronzes of *Order*, *War*, and *Peace*.

The group acquired by the ROM was used by Barye as a finial for a large and important nine-light bronze candelabra with six figures, masks, and chimeras. The model was of an eclectic type, incorporating Renaissance and classical motifs with the group of the Graces supporting an urn. The three figures are posed on a drum-like base of marked neo-classical form, similar to those used for the mounting of sculpture in the late years of the 18th century. The same group, however, was also cast separately, in the form of an incense burner, as in the example in the ROM.

The *Three Graces* affords an interesting and unusual insight into the activities of a sculptor whose importance in the development of 19th-century French sculpture was seminal. The group is an important part of Barye's development in an area in which his work is less well known than in his activities as a sculptor of animals. His abilities in all fields of sculpture, however, command the greatest attention and respect, and it is apparent that in his rendering of the human form he was at least the equal of many of his contemporaries, and in many respects their master. Barye's role in what has been termed the Romantic Revolution is as important in terms of the *Three Graces* as it is in his better-known mastery of standard *animalier* subject matter. In addition, Barye's use of themes popular in Antiquity and in the Renaissance provides a sense of continuity with the sculpture of earlier epochs which is less apparent in his more standard works. Besides providing a link with the past, the *Three Graces* at least partly anticipates the sculpture of the future, as for example, the works of Aristide Maillol and Emile Antoine Bourdelle.

Until recently Barye, one of the most significant of all 19th-century sculptors, was represented in the ROM by one work, a group of an *Arab Rider Spearing a Lion*, derived from one of the larger "hunt" groups in the Walters Gallery, Baltimore. None of his famous animal groups is yet to be seen in our galleries, nor until recently were any of his superb bronzes which depict the human figure outside of an *animalier* context. This is a somewhat glaring gap, and one which the *Three Graces* has helped to fill. The *Graces* is also an important group in that it represents what is among the rarest of Barye subjects, the female nude.

*Corey Keeble is Assistant Curator in the European Department of the* ROM.

# Fossils in the Mail

Mastodon

Dinotherium

Moeritherium

# *Ancient Organisms in Modern Designs*

**Peter H. von Bitter**

Most people have a hobby of one kind or another; many have more than one. One of the most popular hobbies is philately, or stamp-collecting. Palaeontology is perhaps less usual as a hobby but interest in fossils is nevertheless also very widespread.

At first sight it might seem that the two interests, stamps and fossils, have little or nothing in common, but in the last twenty or thirty years a fascinating means of combining the two has been provided. A wide range of countries have issued stamps showing the remains or reconstructions of plants and animals that lived in prehistoric times. As a professional palaeontologist and amateur philatelist, I have derived a great deal of enjoyment from the collection of these "fossil" stamps.

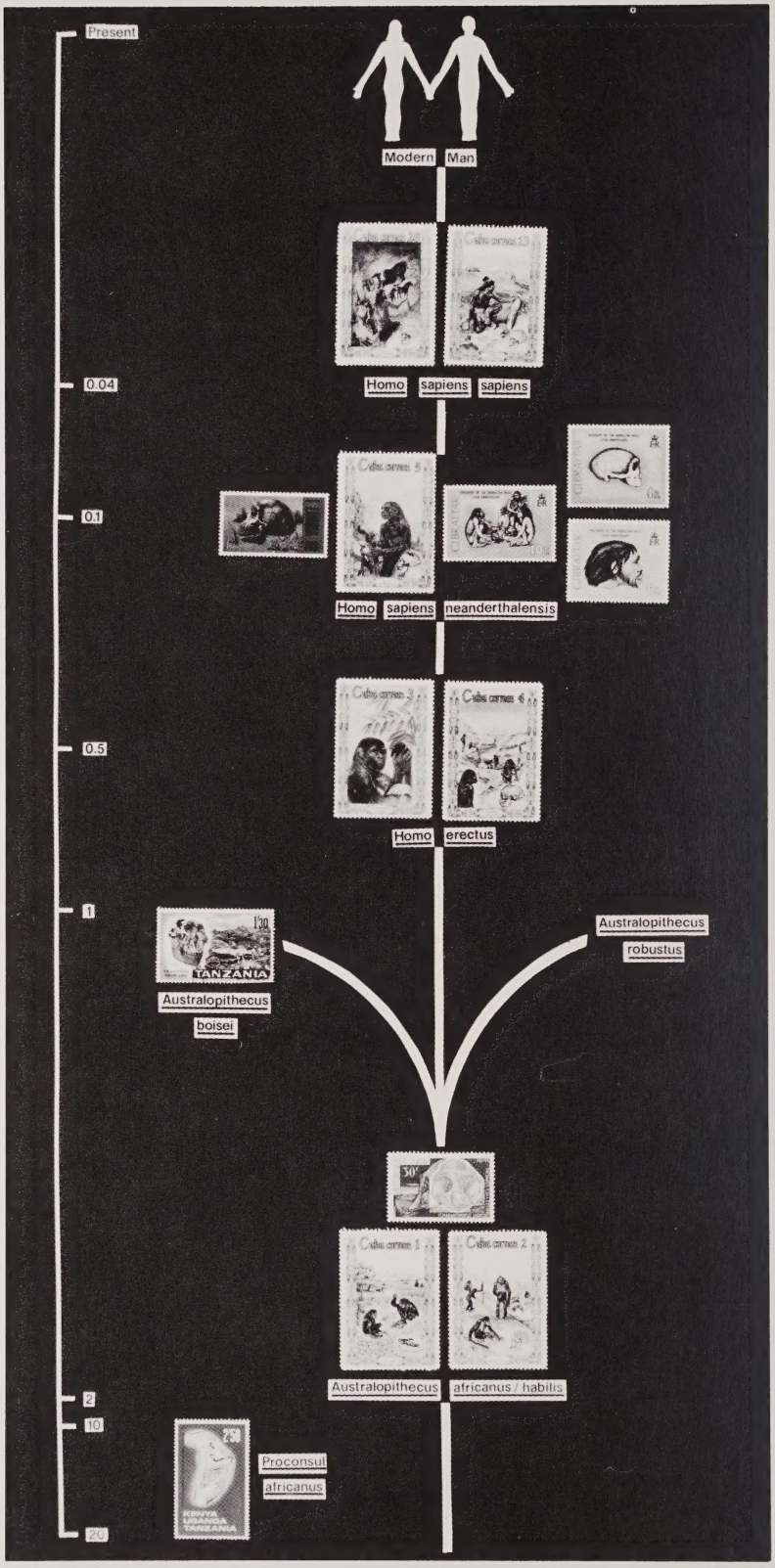
The first stamp with a palaeontological motif was the red two-anna stamp of India (1951) issued to commemorate the centenary of the Geological Survey of India. It shows (Fig. 1) *Stegodon ganesa*, a prehistoric representative of the first true elephants. From *Stegodon* it was only a short evolutionary step to the geographically widely distributed mammoths. These animals were common both during and after the last Ice Age and have been portrayed on the stamps of a number of countries (Romania, 1966; Poland, 1966; Mongolia, 1967). They were hunted by stone-age man and were

*Fig. 1: The development of the modern elephant traced on colourful stamps.*

the ancestors of the elephants found today in Africa and India.

*Stegodon*, the mammoths, and the modern elephants all shared a common evolutionary ancestry with two other lineages, both of which were destined to become extinct. One of these was *Dinotherium* (Romania, 1966; Bulgaria, 1971; People's Republic of the Congo, 1970), an early proboscidean animal with a trunk with unusual downward-curving, shovel-like tusks that were probably used to dig up edible roots and plants. Animals of this genus survived successfully for nearly 30 million years, and perhaps finally died out because of their inability to adapt to the drastic climatic changes brought about by the last Ice Age. The second branch of proboscidean evolution (Fig. 1), the one that included species of mastodon (Bulgaria, 1971; Mongolia, 1967), survived the last Ice Age and became extinct, for unknown reasons, as recently as 8,000 years ago.

Recent important discoveries of the fossil remains of early man in Africa have made palaeoanthropology (the study of fossil man) a popular subject for stamps (Fig. 2). *Proconsul africanus* (Kenya, Uganda, Tanzania, 1967), found on Rusinga Island in Lake Victoria, was an early ape that lived 10 to 20 million years ago, and was an ancestor of the chimpanzee and possibly the gorilla but not of man. *Australopithecus boisei*, (Tanzania, 1965), discovered by the famous palaeontologist and anthropologist Louis Leakey, is thought to have been one of the earliest man-like creatures. Unlike man, however, this species was vegetarian and may not have walked fully erect. It is not thought to have been an ancestor of human beings and it disappeared about a million years ago. *Tchadanthropus uxoris*, or Lake Chad Man (Chad, 1966), is another australopithecine of unknown relationship to man. The true ancestor of man was probably *Australopithecus habilis* (= *Homo habilis*, on Cuba, 1967) a creature that lived in Africa less than two



million years ago.

The first true men, of the species *Homo erectus* (Cuba, 1967), evolved less than a million years ago. Dr. Davidson Black, a Canadian professor of medicine teaching in China, discovered and named what is still the best-documented occurrence of *Homo erectus*. In a limestone cave in China Dr. Black discovered the famous fossil remains of Peking Man. About 200,000 years ago, *Homo erectus* evolved into the modern species, *Homo sapiens*. There were a number of races that belonged to this species. Among these were Neanderthal Man (Cuba, 1967), who was, contrary to previous ideas, a quite advanced human being who lived in Europe and around the Mediterranean Sea; Gibraltar Man (Gibraltar, 1973), probably a type of Neanderthal Man; and Broken Hill Man, also known as Rhodesian Man (Zambia, 1973), who lived in Africa. The latest step in the story of prehistoric human evolution was Cro-Magnon Man (Cuba, 1967), a human being that was distinguished from modern man only by cultural rather than by physical differences.

Invertebrate fossils (the remains of animals that lacked a backbone) have achieved some prominence on postage stamps not only because of their intriguing shapes but also because of their usefulness to geology. The ammonites, a group of extinct, coiled marine animals belonging to the same zoological group — the cephalopods — as the chambered *Nautilus*, the squid, and the octopus, were first shown on the bright red Algerian 15-franc stamp of 1952. This issue illustrated the species *Berbericeras sekikensis*, an ammonite that lived 160 million years ago during the Jurassic Period. Not only are fossil ammonites aesthetically pleasing, but they are also very useful in dating the rocks in which they are found. Since the initial Algerian issue, at least ten other countries (Fig. 4) have recognized the importance of these coiled invertebrates, and they have become the most common fossil invertebrates depicted on postage stamps. An unusual issue (Angola, 1970) shows an ammonite with an uncoiled shell. This "uncoiling" is thought to have come about as ammonites attempted to adapt to a new and less mobile bottom-dwelling and feeding life during the last 90 million years of their evolution.

The trilobites are another group of extinct invertebrates to have achieved both popularity and importance. Trilobites were arthropods related to horseshoe crabs, lobsters, and crayfish. Although none survived the end of the Permian Period, 225 million years ago, we find their likenesses staring into the present on the stamps of at least four countries. The beautifully detailed Czechoslovakian issue of 1968 (Fig. 3) showing *Selenopeltis buchi buchi*, a trilobite of 480 to 440 million years ago, is among the loveliest of "fossil" stamps. Smaller, but sharing some of this perfection, is the

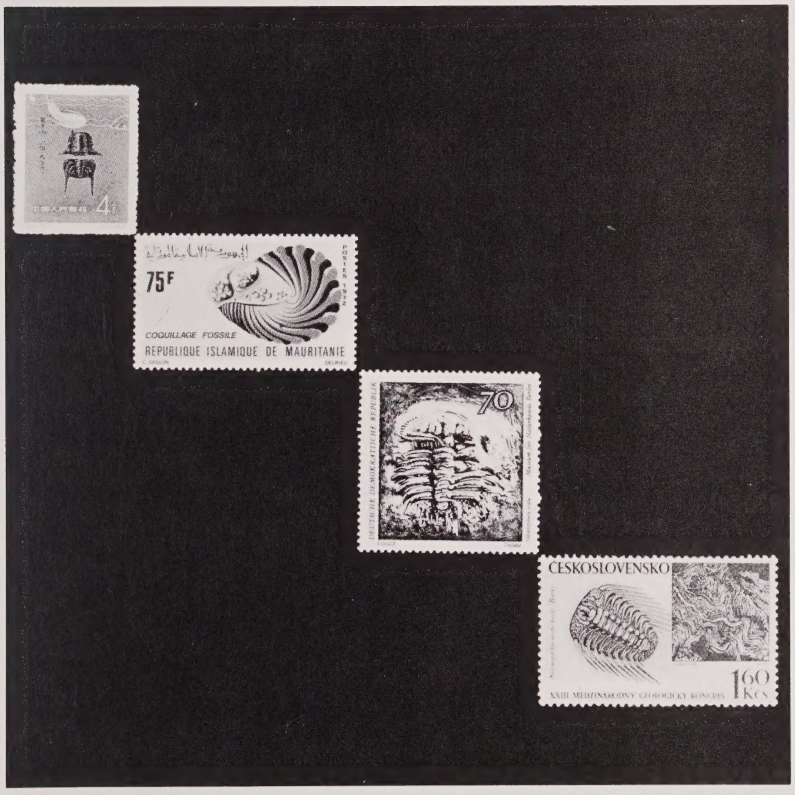



*Fig. 2, opposite page: The evolution of man.*

*Fig. 3, left: The trilobites, a group of extinct invertebrates, are shown on stamps issued by four countries.*

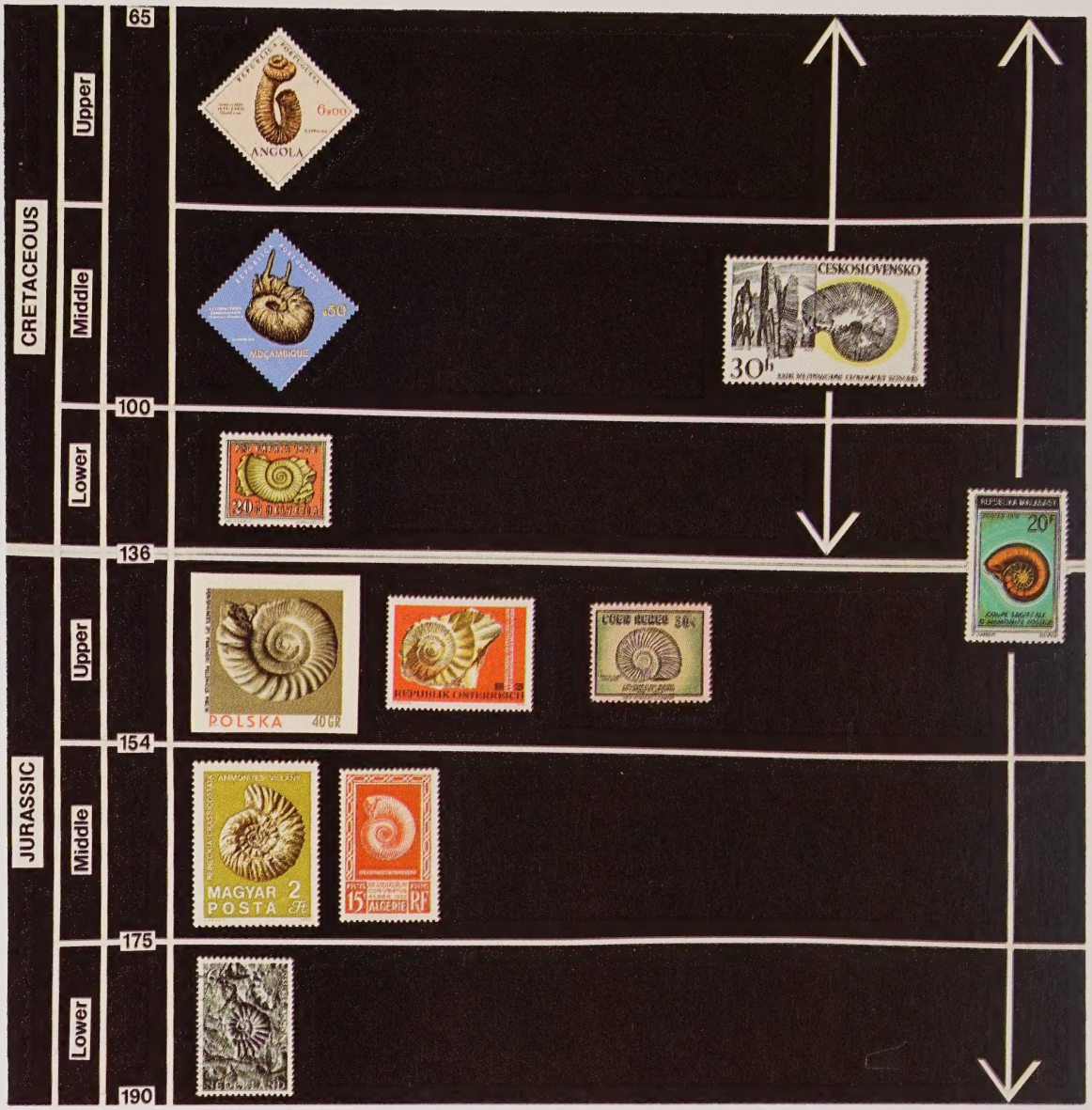



*Fig. 4: Ammonites, a group of extinct coiled marine animals, as depicted on the stamps of 11 countries.*

1958 stamp of China showing the trilobite *Kaolishania* of Late Cambrian Age (500 million years before present). Both of the preceding examples were produced by line engraving, a traditional printing process used in the manufacture of fine-quality banknotes and postage stamps. Strikingly different in its modernistic approach is the 1972 issue of Mauritania showing a highly stylized and colourful trilobite printed by the now more common lithography process. The trilobite, although not identified, is probably a species of *Phacops* and shows the typical habit of this group of rolling themselves up, possibly to protect themselves from hungry enemies.

The third major category of fossils, the fossil plants, have in recent years been illustrated on the postage stamps of a number of nations (Fig. 5). Angola (1970) showed the mound-like stromatolites that were built up by algae. Algae are among the oldest forms of life and algal stromatolites have been found in rocks as old as three billion years old. Seed ferns that grew in coal-age swamps some 290 million years ago

*Fig. 5: Fossil plants have been popular on postage stamps in recent years.*

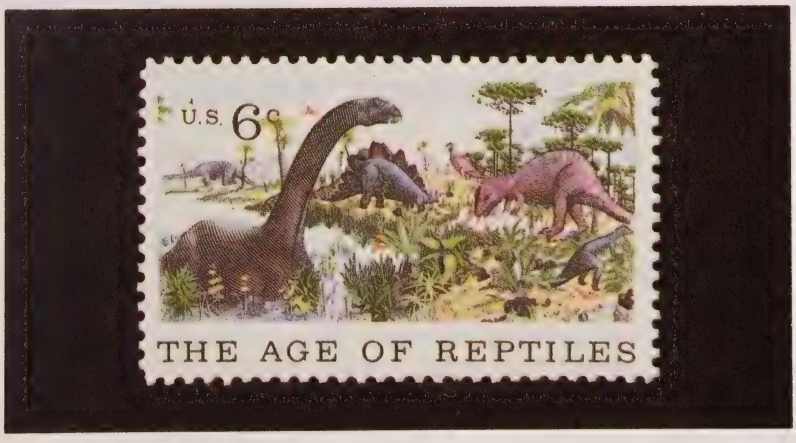
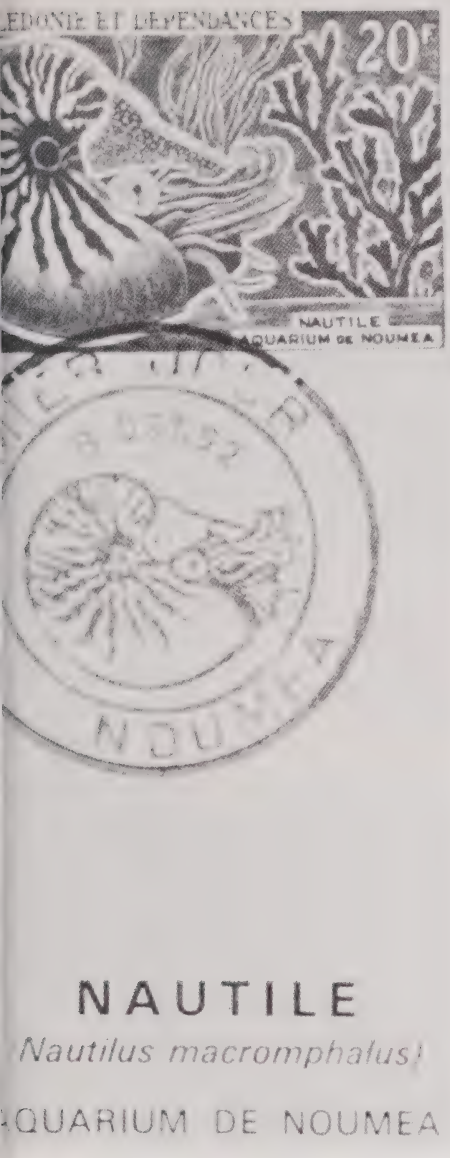



*Fig. 6, left: A group of dinosaurs in a Jurassic landscape, a reproduction of a wall painting in the American Museum of Natural History in New York, appeared on one of the four stamps issued to celebrate the museum's 100th anniversary.*

*Fig. 7: The chambered* Nautilus, *a "living" fossil, was illustrated on a stamp issued by New Caledonia.*

have been illustrated by East Germany (1973), as were the earliest conifers, or needle-bearing trees, of the genus *Lebachia*. Among the most famous and important fossil plants are those belonging to the so-called *Glossopteris* flora (Zambia, 1973; Mozambique, 1971; Angola, 1970). This flora is restricted to rocks of Permian-Carboniferous age (280 to 225 million years before present) in southern hemisphere countries such as India, Australia, Angola, and Brazil. The countries and continents where it has been found are thought to have made up originally a large super-continent, called Gondwanaland, that subsequently broke apart. Such restriction to rocks of different countries of the southern hemisphere is important evidence that continents have moved or "drifted" in the past.

The earlier "fossil" stamps were issued to commemorate particular geological events such as geological congresses (Algeria, 1952) and centenaries of geological surveys




(India, 1951). All the fossils shown in these earlier stamps were found in or have a direct connection with the issuing country. Such a "nationalistic" justification was still the case with China's 1958 issue of three stamps showing fossils which had been found in that country. Recently, however, countries such as Poland (1965) and San Marino (1965) have begun to illustrate fossils that have little or no connection with the country issuing the stamps. The reason for this was that these stamps would be bought by stamp collectors and consequently were an extra source of revenue for the issuing country. During the middle sixties Eastern-bloc countries such as Romania, Bulgaria, Hungary, and Mongolia continued this practice and more recently a number of less well-known, smaller countries — Fujeira, Manama, Dahomey, and the Maldives — have done the same. This practice, combined with an unwarranted issuing of a large number of varieties, has prevented many of these issues from being recognized as valid postage stamps.

Palaeontological stamps have also been used to commemorate anniversaries of some well-known museums. When the American Museum of Natural History in New York celebrated its 100th Anniversary in 1969-70, the United States issued a set of four stamps in its honour, one of which illustrated the museum's well-known wall painting of a group of dinosaurs in a Jurassic landscape (Fig. 6). The Vienna Natural History Museum's recent centenary was commemorated by a red stamp (Austria, 1976) showing the ammonite *Virgatosphinctes transitorius* of Late Jurassic Age (140 million years ago). It would be particularly appropriate if the ROM were some day so honoured, not only because of its notable collections but because Canada itself possesses a rich and little-appreciated fossil heritage.

I have been able to indicate only briefly a few of the different aspects of collecting fossils on stamps. There is also a great diversity of colourful dinosaur stamps; these large and imposing animals have kindled the imaginations of generations of children and script-writers as well as of many stamp designers. There is the whole area of "living" fossils — living left-overs from prehistoric times, such as the *Ginkgo* tree, which was found in China, the coelocanth fish *Latimeria*, found off the coast of Madagascar, and the chambered *Nautilus* that lives in the Pacific (Fig. 7). All of these provide rich rewards for the collector, to delight the mind and the eye.

*Dr. Peter H. von Bitter joined the ROM's Department of Invertebrate Palaeontology in 1970 where his particular concern is the study of microscopic fossils called conodonts. He has other varied interests including mineralogy and philately. Dr. von Bitter is Associate Curator-in-charge of the Department of Invertebrate Palaeontology and is cross-appointed to the University of Toronto as Associate Professor in the Department of Geology.*

*Above: Unrestored, scroll-armed mahogany sofa. The pine back-frame upright is marked in pencil, under an original black silk covering, "Anderson and Malcolm/ Halifax/1831." Canadiana,* ROM.

*Right: Cherry bureau desk with curly maple drawer fronts and curly maple veneering over pine in the desk front and skirt. Ontario, Niagara Peninsula, c. 1800-1810. Canadiana,* ROM.

*Opposite page: Sideboard of mahogany and mahogany veneers over pine. The inlaid band in a geometric pattern is typical only on furniture of the Montreal area. c. 1815-1825. Canadiana,* ROM.

# Colonial Elegance

## *Canadian Furniture of the Georgian Period — Problems of Identification*

**D.B. Webster**

The best English-Canadian furniture of the Georgian period — that is, up to about 1825 — has been largely ignored in recent times by all but a small coterie of antiquarians. The reasons for this neglect are complex, but there are two underlying factors.

First is a still ingrained but entirely unwarranted belief that anything finely wrought must be English, or at any rate imported. According to this view Canada, as a raw and pioneer country, could not possibly have generated craftsmanship with any degree of style or excellence.

The second factor is the problem of identifying pieces of quality as being Canadian in origin. English-Canadian furniture of the Georgian period is but one ingredient in a large cultural salad, since it is a derivative of the styles and forms of Britain and, to a lesser extent, the United States. In Canada, as elsewhere, the favourite designs were those of the Chippendale, Hepple-

white, and Sheraton schools and of a large number of individual fashion-setting designers and makers from Robert Adam to Duncan Phyfe. But while the core characteristics of the various schools or "periods" still remain apparent even in stylistic mixtures, the task of determining *nationality* or *regionality* of furniture within the whole sphere of predominantly English styles, sometimes themselves European derivatives, can be a very difficult one.

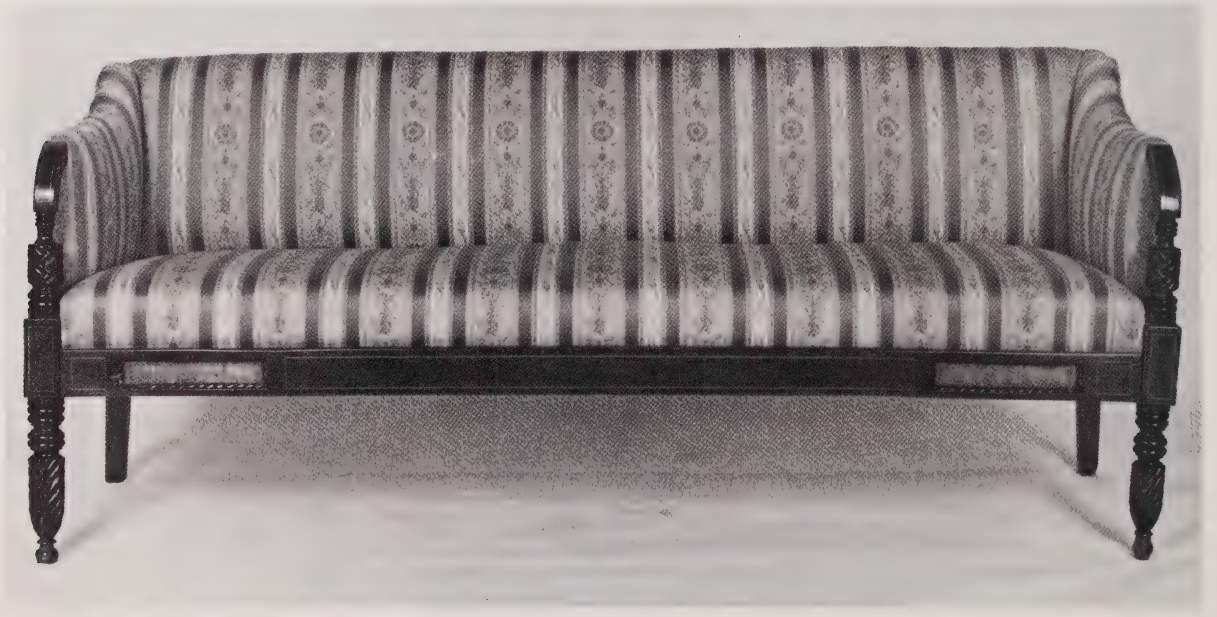
The wood most generally favoured for Canadian Georgian furniture was West Indian mahogany, which was imported into seaports such as Halifax, Saint John, Quebec, and Montreal, just as into British and American coastal cities. A cargo of mahogany, however, was far more easily transported by water than overland. Consequently, even a short distance inland from seaport cities, mahogany was used much less commonly than indigenous substitutes such as cherry, stained birch, and butternut, or contrasts such as figured maple or walnut.

In Canada during the Georgian period, from roughly 1780 on, cabinet-making in mahogany was limited mainly to ports where logs and lumber could be landed, though in a few places the wood was shipped inland by river. Thus we do not find any Canadian mahogany furniture of the Georgian period that can be attributed to inland Nova Scotia, to central New Brunswick (except Fredericton, on the Saint John River), to anywhere in Quebec other than Quebec city, Trois Rivières, and Montreal, or to any part of Upper Canada. In all these areas, inaccessible as they were to shipments of heavy mahogany, cabinet-makers depended on native woods.

Positive identification of wood is perhaps the single most important factor in identifying furniture. Generally speaking, when native woods are used, the natural growing ranges (or the overlap of ranges) of those woods will be a prime clue to where a piece was made. Unfortunately, the ranges of many common North American cabinet woods are geographically very large, so that in many cases wood identification alone can provide only a broad idea of the regional origin of a piece of furniture. One consequence of this is that it is much easier to distinguish Canadian furniture from English than from northeastern American furniture, despite the fact that the great majority of early Canadian cabinet-makers were British immigrants rather than Americans. The reason is simply that the native woods of eastern Canada and New England and New York are largely the same, while those of the British Isles are entirely different.

Once the woods of a particular piece of furniture have been identified, we can go on to examine various hypotheses based on these identifications. The process now becomes one of elimination, for the sorting out of various suppositions gradually leads to an ever-narrowing range of defensible choices. In an article of this length, only some of the commoner indications of provenance can be given.

There is no evidence that earlier Canadian furniture-makers ever used imported woods other than mahogany as either structural or secondary woods. Thus, if a good piece of Georgian-period mahogany furniture incorporates secondary woods not indigenous to Canada, the possibility of Canadian origin is excluded. Earlier Canadian furniture, even the most elegant, utilizes white pine as the main and usually the only secondary wood. Rarely is any other wood used, though occasionally native hardwoods are employed for glue blocks or specific support pieces.



*Opposite page: Mahogany Nova Scotia Sheraton sofa, with maple line inlays and birdseye maple panel inserts. c. 1810-1830. History Division, National Museum of Man.*

*Left: Birdseye maple bookcase, with mahogany line and keyhole inlays, and skirt and drawer fronts maple-veneered over pine. Halifax, c. 1820-1830. Private collection.*

*Below: New Brunswick chest, c. 1820, with crotch-birch veneered drawer fronts, maple line inlays, and English drawer pulls. New Brunswick Museum.*

Northeastern American furniture also very often includes white pine as the main secondary wood. Much American furniture, however, has mixed secondary woods of perhaps several different species. Such mixtures are very uncommon in Canadian furniture.

Assuming that the presence of non-native woods, except for mahogany and possibly exotic veneers, is presumptive evidence of non-Canadian origin, what then do we look for?

The most common native hardwoods in sophisticated and better "country" Canadian furniture are maple (often curly or birdseye), birch (sometimes highly figured), black cherry, butternut, and black walnut. Ash (usually a curly type), chestnut, and oak were *occasionally* used as furniture woods. Beech, elm, hickory, poplar, and cultivated fruitwoods (apple, pear, etc.), though included occasionally in American furniture, are not found in Canadian furniture of the Georgian period.

The use of maple, either straight-grained or figured, is not in itself evidence of any particular origin. Maple was a favourite material for furniture in Upper Canada, the Quebec Eastern Townships, and Nova Scotia, as well as in New England, New York, Pennsylvania, and Great Britain. Maple, however, was often mixed with other primary woods, and these combinations vary considerably from one area to another, depending on the availability of the woods.

The typical combination in Upper Canada was maple and cherry, often striking and eye-catching. (This combination was also common in New York State.) Maple and walnut combinations appear as well, but less commonly, and their area of origin in Canada is limited to the Niagara Peninsula and the lakeshore areas of southwestern Ontario.

In Nova Scotia and New Brunswick, the woods most often combined with maple were mahogany and birch. Native wood combinations in the Maritimes, however, were both less common and far less extensive than in Upper Canada. Though contrasting woods were occasionally used in the construction of furniture or as veneers, for the most part the use of the darker woods was limited to drawer-edge beading and thin-line or keyhole inlays. This is true also of Quebec. The woods used with maple in

Quebec, however, are indigenous butternut or other maple of a different grain.

Maple inlays, or maple-veneered surfaces incorporated into basically mahogany furniture, are another matter. Maple thin-line inlays were commonly applied by cabinet-makers in urban Quebec, the Maritimes, New England, and New York. Some of the finest existing New England furniture, in fact, is of figured maple veneers and inlays combined with mahogany, a combination that is rare in the Maritimes. Maple-inlaid furniture, however, must be sorted out through the forms of the inlays, and through stylistic and design details.

The use of birch as a primary cabinet wood was confined mainly to the Maritimes. Birch was the poor-man's mahogany of New Brunswick and Nova Scotia. It was probably used as a furniture wood out of necessity, because it was available, rather than by choice, for plain straight-grained birch is not a handsome or rich wood when finished (except for very occasional branch-crotch cuts) and is extremely susceptible to rapid decay. Though not unknown, birch is most uncommon as a furniture wood of Quebec or Upper Canada. It was used in combination with maple and mahogany both in the Maritimes and in northern New England, but its use as a sole primary wood is more typical of the Maritimes and is a strong indication of Maritimes origin.

Black cherry, like birch in the Maritimes, was the poor-man's mahogany of Upper Canada and New York State. Unlike birch, it is an extremely rich wood; many people prefer it to mahogany. In "country" Chippendale or Hepplewhite styles, Georgian furniture in cherry can be difficult or even impossible to distinguish as having been made in Upper Canada rather than in New England or New York.

Cherry is only rarely seen in furniture from the Eastern Townships of Quebec or from the Maritimes. The wild cherry that grows in those areas is usually shrubby, and not of cabinet-making size or quality. Cherry was likewise not a common furniture wood of the New England states.

The use of butternut as a cabinet wood in Canada virtually identifies a piece as a product of the Eastern Townships or extreme eastern Ontario, for the natural range of butternut is rather limited. Butternut was for a long time a favourite wood of French-Canadian traditional cabinet-makers, but French-inspired furniture is easily identified stylistically. English-Canadian butternut furniture is usually of a "country" category, and I cannot recall ever having seen an English-Canadian butternut piece dating earlier than about 1820.

Walnut likewise has a limited

*Above: Simple Ontario cupboard of curly ash from the 1840s. Canadiana, ROM.*

*Right: Simple "country" butternut chest from the Eastern Townships. The inlaid "1852" dates it. Canadiana, ROM.*

natural growth range in Canada, being found only in the Niagara Peninsula and in Lake Erie areas of Ontario. It was also a traditional cabinet wood of the Pennsylvania Germans who migrated into Upper Canada between the end of the American Revolution and the mid-19th century. Germanic furniture of Upper Canada, in walnut as well as in other woods, is characterized by an absence of veneers, though inlays were used. The use of the primary wood, walnut or maple, often extends to hidden areas where a British or Anglo-American maker would more likely have used a lighter secondary wood such as pine.

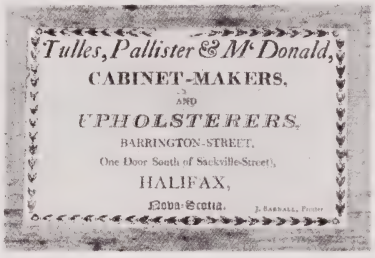
Ash was not generally used as a cabinet wood and is found in "country" furniture only in a curly variation. The few known pieces in curly ash, all of Upper Canada origin and later than the Georgian period, are so imposing in their bright yellowish wood as to overpower any other furniture with which they are placed.

Oak and chestnut, both native woods and of similar grain, were only rarely used in furniture during the early 19th century, and then usually in simpler "country" pieces such as kitchen tables. The basic trend of fashion during the late Georgian period was to mahogany and satinwood and their North American substitutes. Oak was not to return to popularity as a cabinet wood until the 1890s.

Once we have learnt what we can about the origins of a piece of furniture from an examination of the woods used and of the ways in which they are combined, further evidence for locating and dating furniture must be sought in the stylistic and mechanical details. We must also consider very closely the habitual patterns of usage of wood and other materials by cabinet-makers in different regions, as revealed by broad observation. However, there is nothing in the realm of furniture identification as precise as scientific taxonomy. In fact, I cannot think of a single internal or inherent characteristic of the furniture under discussion that would indicate beyond question and with absolute certainty that a particular piece was made in New Brunswick rather than in Maine, or in upper New York State rather than in Upper Canada.

Without any broad and absolute stylistic differences to distinguish Canadian furniture of the Georgian period from that of Britain or English-Canadian from that of the United States, to say nothing of the finer distinctions within these broad regions, we must look at external evidence and historical information.

Furniture whose history is known is extremely valuable for purposes of comparison. In particular, self-identifying pieces, i.e., pieces labelled or otherwise




*Above: Paper label of Tulles, Pallister & McDonald of Halifax. The only other Georgian-period Canadian maker known to have used paper labels was Thomas Nisbet of Saint John.*

*Left: Library or drum table in an English Regency manner, of mahogany and mahogany veneering over pine, labelled by Tulles, Pallister & McDonald of Halifax, c. 1810-1811. Present location unknown.*

*Above: Nova Scotia maple chair with serpentine pierced back-splats, a particularly English form, not found in other areas of Canada and uncommon in the United States. Nova Scotia Museum.*

*Right: Typical late Canadian Chippendale chair of maple, without veneering or inlays. Made in Nova Scotia, c. 1810-1825. Nova Scotia Museum.*

marked by their maker, though rare, are especially valuable, since they provide in themselves the strongest possible evidence of the style and workmanship of individual makers, and of the materials used by them.

The next most reliable kind of evidence is an established association with a particular maker, even though the furniture itself may be unmarked. One of the largest collections of furniture by a single Canadian craftsman, a group of more than 40 pieces made between 1835 and 1880 by John Warren Moore of St. Stephen, New Brunswick, was recently transferred by Moore's grand-daughter back to New Brunswick, to the Kings Landing Historical Settlement. She had fortunately insisted that the collection remain intact. With the furniture went a 50-year accumulation of Moore family correspondence, in which many of the pieces were well described and accurately dated. Such preservation of evidence, however, is rare.

Perhaps the least reliable kind of external evidence is unsupported and usually unsupportable word-of-mouth association. Whether a dealer says a piece "came from . . ." or was "discovered at . . ." or "came from such-and-such an estate," or someone else says it was a favourite of her great-great grandmother, all such information must be examined critically. Sometimes the information is accurate and helpful and matches nicely the internal or inherent evidence of the piece of furniture itself. However, I can also think of numerous occasions on which stated associations, in circumstances where there was no apparent motive for deception, could not possibly have matched the furniture in question.

In considering regional characteristics, after examining the choice and usage of woods, we must go on to consider minutiae — those small details that help to characterize any piece of furniture. Such details can often give a strong indication of a piece's origin.

One broad characteristic of earlier English-Canadian furniture is its simplicity, and even austerity, of appearance. The only exceptions are the known work of a small number of cabinet-makers in Halifax, Saint John, Quebec, and Montreal, who worked in mahogany. We must remember that even towards the end of the Georgian period Canada still had a small population and a simple economic structure. The number of people able to afford elegance or to patronize those cabinet-makers capable of producing it was very small compared to that of the older and more established American cities, and miniscule by British standards. Since a large part of the population consisted of first-generation colonists, many of this small "establishment" looked to England both as home and as the source of true elegance. Small wonder that most Canadian furniture was considered provincial by the English, or "country" by Americans.

One of the commoner forms of Canadian Georgian furniture is the late Chippendale chair. Such chairs occur with various eared, arched, or square back forms, and simply pierced vertical splats. With rare plank-seated exceptions, the chairs have separate upholstered slip seats, the seat frames invariably being of white pine.

The legs of these chairs are either straight and square, or straight-square-tapered, and they are usually box-stretchered. Seat frames are very often cut in a simple bead or quarter-round moulding, as are sometimes also the exposed corner edges of legs and stretchers. Very few Canadian Chippendale chairs are known with front cabriole legs. Carving is extremely uncommon and, where it is present, is minimal and confined to the backs of the chairs. Veneers and inlays were never used, and secondary woods were limited to the glue blocks of the frame.

The same austerity is apparent in chests of drawers. Most English-Canadian chests are flat-faced, and their drawer fronts are either solid or veneered with mahogany, figured maple, or birch over pine. There may be a cock-bead drawer-edge moulding of a contrasting wood. Drawer fronts usually close flush with the corners and cross-spacers. Bevelled or moulded drawer-front overlaps, though common on American chests, are the exception in Canadian pieces. The internal parts of the drawers are invariably of white pine, with sides dovetailed into fronts.

In chests, desks, and other drawered furniture, the English form of inlaid keyhole lozenge or diamond is very typical, especially in the Maritimes, but to a lesser extent also in the formal furniture of Quebec and Upper Canada. Though the inlay is usually plain and of a wood contrasting with the drawer front, occasionally it is made of bone or horn.

The keyhole inlay is uncommon in American furniture, which generally had brass keyhole liners or overlaid brass keyhole plates. The latter, on the other hand, are not typical in Canada, except in furniture clearly derived from American styles, such as the maple and walnut pieces of the Niagara Peninsula of Ontario.

Inlay work in Canadian furniture is tasteful but minimal, rarely complex, and never imposing, in the manner of that on English and some American furniture. Thin single-line inlays are the type perhaps most often encountered, usually in a contrasting wood such as maple on mahogany or walnut on maple. Patterned-line inlays of several woods are quite rare, and appear to be restricted to furniture of the Montreal area.

Motif inlays — rosettes, corner fans, or shells — appear mainly on mahogany tall clock cases, and only occasionally elsewhere. Tall clocks are thus the most opulent single form of Canadian furniture, and the one on which the most work and expense were lavished. These uncommon motif inlays are not of native woods; they appear to have been imported in block form, to be sawn off in thin sections as needed.

Veneers of imported woods other than mahogany are all but unknown. Very occasionally furniture has small sections veneered in

satinwood or European walnut. Apart from these rare exceptions, however, figured veneers are invariably of native maple, birch, or walnut.

As with veneers, the structure and treatment of even the best of English-Canadian furniture sometimes embodies severe short-cuts and simplifications. Bow-front chests, for example, are uncommon, and serpentine or reverse-serpentine fronts are rare. Both seem to be limited to Nova Scotia and New Brunswick. In the forming of drawer fronts, only very slight bowing was accomplished by hot or steam bending. More extreme bows or serpentine fronts were achieved by block-cutting and shaving, usually only on the exterior. These block-cut, curved drawer fronts are generally flat on the inside, and up to two inches thick at the extremities of exterior convex curves.

Like veneers and good mahogany, hardware seems often to have been hard to come by, or too expensive to use. The hardware of Georgian-period Canadian furniture was invariably English. Cabinet hardware does not seem to have been manufactured in Canada until well into the 19th century.

Castors, again English, were confined to only the finest furniture, usually mahogany pieces. In the earlier period castors were not usually used on pieces made of native woods, though this use is not altogether unknown.

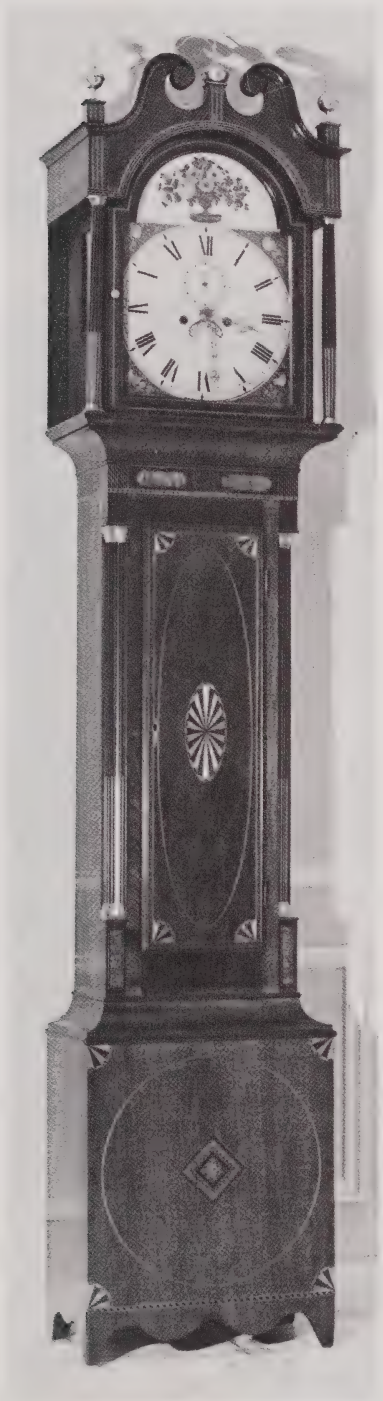
Reflecting the general austerity of design and treatment of Canadian furniture, many chests, desks, and other drawered pieces originally had little or no hardware at all. Turned wooden knobs, for example, were very commonly used instead, even on finer mahogany, maple, or cherry pieces that clearly deserved something better. Some early furniture has been "upgraded" in recent years with the addition of reproduction drawer pulls and keyhole plates in place of the original wooden knobs and unornamented keyholes. It is essential, in examining English-Canadian furniture, to look closely and discover whether such replacement has taken place.

Examples of Canadian Georgian furniture also very often include incongruities of design or proportion, which can be so covert or subtle as to be difficult to identify. A small table, for example, may have legs that are heavier than necessary or disproportionately turned. (Fluted,

*Left: Violinists' double music stand, with attached extension candle-holders. Made of mahogany with a mahogany-veneered pine base. New Brunswick, c. 1835-1845. York-Sunbury Historical Society, Fredericton.*

*Right: Curly maple slant-front desk, with lighter maple line inlays and an English shell inlay in the cover. Nova Scotia, c. 1815-1825. Private collection.*

*Tall mahogany clock, with maple and mahogany line, geometric, and fan inlays. Labelled "Jas. Orkney/ Quebec", c. 1790-1800. Private collection.*



reeded, or rope-carved legs are rare on Canadian tables; plain turnings are the rule.) A chest whose design calls for extended or "Chippendale" bracket feet and skirt may have instead plain short turned legs (this is common in Nova Scotia). Otherwise excellent pieces may inexplicably have corners showing exposed dovetailing. Original nails may appear at joints which one would expect to see dovetailed, or mortised and pinned. Flared "French" feet on chests of drawers may have been made separately and joined on, rather than being integral with the sides or skirt (a much stronger method of construction).

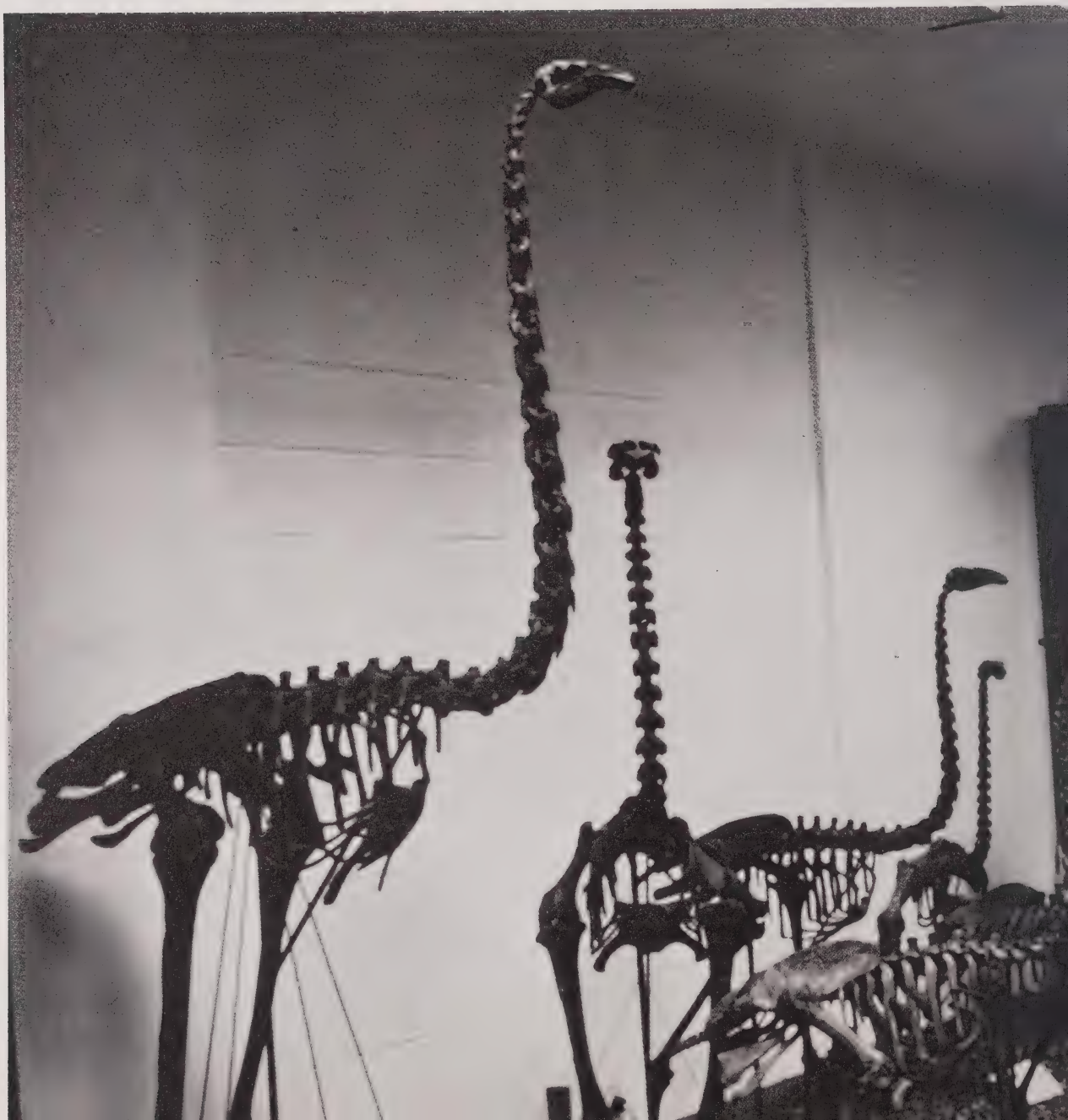
All these varied points of difference in detail between Canadian and American furniture are generalities, and at best inexact. In dealing with the characteristics of furniture produced by people whose cultural affinities were far greater than their differences, we cannot expect to find hard-and-fast distinctions based on national or regional origin.

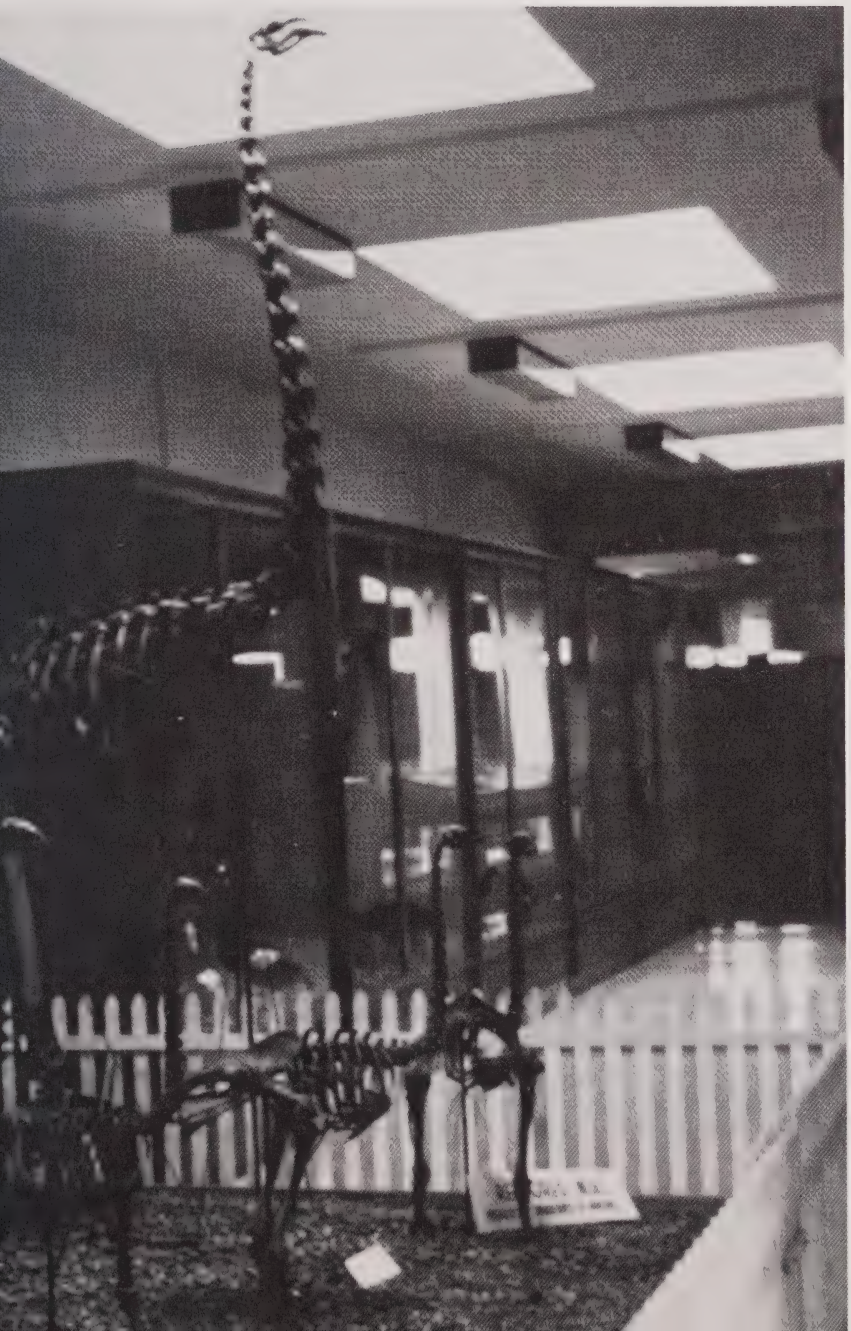
Since the furniture of eastern Canada and that of the northeastern United States have the closest similarities, it is pieces from these two regions that are the most difficult to identify with absolute certainty. In considering pieces long detached from any known family or historical background, it may sometimes be plainly impossible to arrive at a firm and beyond-reasonable-doubt decision even as to whether they are of Canadian or American origin.

In probably the larger number of cases we can reasonably decide that a piece of furniture is or is not Canadian, and we may even be able to assign it to a particular province or region. In the best of circumstances, given a piece of unknown origin that incorporates highly individual construction, carving, or other elaboration, and other known pieces to compare it with, we might even be so fortunate as to come up with a well-reasoned attribution to a specific maker. That is the height, and also the supreme and rare reward, of furniture identification.

*Donald Blake Webster is Curator of the Canadiana Department of the* ROM, *and author of several books. He is greatly interested in the early and continuing history of industry and technology and its social impact. This article is adapted from a chapter for Mr. Webster's forthcoming book* English-Canadian Furniture of the 18th and 19th Centuries: *(vol. 1)* The Georgian Styles, *to be published by McGraw-Hill Ryerson.*

# On the Track of the Moa





# *Extinct Flightless Birds from New Zealand*

**C. McGowan**

On December 21, 1835, H.M.S. *Beagle* dropped anchor off the northeast coast of North Island, New Zealand. Charles Darwin was homeward bound on a voyage which had begun in Portsmouth four years and six days before, and he was obviously anxious to return to the England he missed. He stayed for only nine days and wrote in his diary: "I believe we were all glad to leave New Zealand. It is not a pleasant place. Among the natives there is absent the charming simplicity which is found at Tahiti, and the greater part of the English are the very refuse of Society." It is unfortunate that his visit was so brief, because New Zealand is of considerable biological interest, largely because of its long period of isolation from the rest of the world.

According to the widely accepted theory of continental drift, the continents are not in the same positions today as they were in the distant past. At the close of the Permian Period, some 240 million years ago, all the continents were joined together in a single land mass referred to as Pangaea. During the Mesozoic Era (which extended

*Top: The Murchison Range from Lake Te Anau. This isolated area of southwestern South Island is a refuge for native plant and animal species and is the home of* Notornis.

*Opposite page: A display of mounted moa skeletons, Wanganui Museum, North Island.*

*Below: A charred tree stump lying where it fell beneath a shower of hot volcanic ash from an ancient eruption some 60 miles distant. Waikaremoana, North Island.*

*Bottom: The small spotted kiwi,* Apteryx oweni. *Kiwis are nocturnal and therefore rarely seen. This specimen was photographed during the day in a thick forest at the government conservation station at Mount Bruce, North Island.*

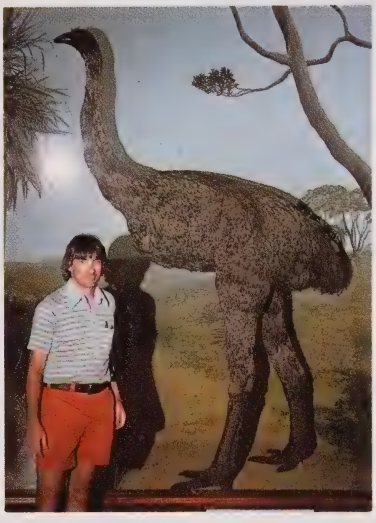
from about 240 million to 65 million years ago) Pangaea split up, and the continents drifted towards their present positions. Australia, with New Zealand attached, remained connected with Antarctica for most of the Mesozoic, long after the other continents had drifted northward. Australia appears to have lost its connection with Antarctica during the Late Cretaceous (about 65 million years ago), and it seems that New Zealand had already separated from Australia before this event. New Zealand, then, has been isolated from the rest of the world for more than 65 million years.

As most vertebrates (animals with backbones) had not reached New Zealand before its separation, the fauna is relatively poor. There are no snakes and no native land mammals, except for two species of bats. Only three species of frogs occur, and about 30 reptile species, and all of these are endemic (i.e., occurring nowhere else). Of the 65 native bird species, 37 are endemic and many are flightless. Some of the flightless birds have fairly well-developed wings and are obviously descended from flying ancestors; there is a flightless parrot (the kakapo), a duck, and a goose, and several rails and swamphens. The kiwi and its giant extinct relatives, the moas, have very small wings or no wings at all, and may have evolved from ancestors which never did fly. Most of the present day flora and fauna have been introduced, both naturally, mainly from Australia, and also by man, from all parts of the world.

Man first arrived about 1,000 years ago, from somewhere in the Pacific, bringing with him rats and dogs. The first colonists came upon a land the like of which had never been seen before. The glaciers that had gripped most of the South Island during the great Pleistocene Ice Age had retreated more than 10,000 years earlier, carving wide valleys and scooping out deep lakes as they went. Although the period of mountain building had ended several million years before, the land was not yet still, and volcanoes periodically blotted out the sun with their ashes and sulphurous fumes. Some eruptions were so violent that forests were burnt down by

*Left: The Takahe, Notornis hochstelleri, considered extinct but rediscovered in 1949. One of several breeding birds at the government conservation station at Mount Bruce, North Island.*

*Below: Allan Baker stands beside a reconstruction of the tallest moa, Dinornis, in the Auckland Museum, North Island.*



falls of hot ash as far away as 60 miles. Charred tree stumps can still be found today lying where they fell beneath the ash.

The land was devoid of mammals and in their stead roamed enormous flightless birds, the moas. The smallest species were the size of geese, but the largest were twice the height of a man. In the absence of natural enemies these birds were probably unafraid, and man found in them a ready source of food. A moa-hunting culture evolved, and man obtained not only food but tools, weapons, and ornaments, which he fashioned from bone. Excavations of moa-hunter sites have recovered bone artifacts and numerous moa remains, some still lying on the oven stones on which they were cooked. The oldest radio-carbon date for these bones is about 1000 years B.P., which corresponds with archaeological estimates for the first arrival of man in New Zealand.

A second wave of colonization occurred around A.D. 1350, with the great fleet migration which sailed from Tahiti. The newcomers, ancestors of present-day Maoris, destroyed the moa-hunters and carried on their hunting tradition. There is little doubt that they were largely responsible for the demise of the moa, and the most recent date for a hunting site is about A.D. 1670 It is interesting that this period corresponds with an event recorded in Maori genealogy. One Rangi-huamoa, who lived in the middle of the 17th century, received her name for the last feast of moa eggs in her district.

It seems likely that most of the moas had been exterminated by the 17th century, but some may have straggled on a little longer. It has even been suggested that perhaps some of the smaller species still survive in remote areas of the southwest of South Island. Although the moas were of considerable importance to the Maoris, very little is recorded of them in Maori legends and songs, and they were to remain forgotten until the 19th century. The circumstances of their rediscovery are a glowing testimonial to the deductive potential of comparative anatomy.

In 1837 a piece of thighbone of an unknown animal was found in New Zealand and sent to England for examination by Sir Richard Owen. Owen had a considerable reputation as an anatomist, and has been referred to as "the British Cuvier." After studying the bone and making comparisons with other material, Owen declared: "So far as my skill in interpreting an osseous fragment may be credited, I am willing to risk the reputation for it on the statement that there has existed, if there does not now exist, in New Zealand, a struthious bird nearly, if not quite, equal in size to the ostrich."

Subsequent discoveries con-

*The head and neck of a mummified body of the moa* Megalapteryx didinus, *found in a cave in Queenstown, South Island, in 1876.*

firmed Owen's belief, and he published accounts of the moas during the next half-century. Bones have been found primarily in swamps, caves, and sand dunes, and the quality and quantity of material are probably not surpassed in any other group of extinct vertebrates. Some of the best-preserved material has been found in caves, and several specimens are known where dried skin and feathers are still attached to the bones. One of the more spectacular specimens, discovered in 1876 in a cave near Queenstown, has the muscles, tendons, and ligaments preserved, as well as the skin. Sometimes the contents of the crop are preserved, and an analysis of this dried plant material enables us to determine what some of them ate. Eggs have also been found, sometimes in nesting sites.

One of the most important collecting sites was discovered in 1937, in a low-lying area near Christchurch called Pyramid Valley. A farmer was digging a hole to bury a horse when his shovel struck something hard. A little more digging exposed a number of moa bones, which he took to the Canterbury Museum. Staff from the museum started excavating, and within two years 50 skeletons had been recovered. Several more excavations were conducted and the number of specimens recovered to date amounts to several hundreds. Pyramid Valley was once a swamp, and many skeletons have been found standing in an upright position. Presumably the birds, which may have come to drink, became mired in the swamp and rapidly sank, perhaps while they were still alive. The remains of the extinct eagle *Harpagornis* has been found in association with the moas, and it has been suggested that *Harpagornis* came to the swamp to feed upon the dead and dying moas, becoming itself entombed. The large numbers of moa skeletons which have been collected enable us to construct a fairly complete picture of these birds.

The purpose of my visit to New Zealand was to study all of the moa material, and also material for

other ratites (flightless birds). Over 100 measurements and characters were recorded for each skeleton, and this data is being used to assess similarities among moas and among all ratites. The study is a joint project with Dr. Allan Baker of the Department of Ornithology, and we hope to be able to answer such questions as whether the ratites are closely related to each other, and whether they evolved from flying birds or had a separate origin from the reptiles. Work is also in progress on the functional anatomy of the kiwis, the closest living relative of the moas, and this may shed some light on the moas themselves.

A traveller in New Zealand can convey himself back in time with a minimum of effort. In the cities and towns, especially in the South Island, he can easily visualize himself in England in the fifties. Pristine Ford Prefects and Humber Hawks, children in grey flannels with satchels on their backs, bands playing in the squares on Sundays, all conspire in the deception. In the bush, it would not be difficult to imagine a moa breaking cover. No live moas have been seen, but an incident occurred 30 years ago involving another flightless bird which was believed extinct. The Murchison Range, which lies to the west of Lake Te Anau in the southern part of the South Island, is an inaccessible wilderness which has

*Liz McGowan in the basement of Canterbury Museum, Christchurch, which houses the largest single collection of moas. Without her help it would not have been possible to collect all the data.*

*Chris Paulin of the National Museum, Wellington, examines a moa nesting site where eggs have been found. The caves in this limestone district, near Martinborough, North Island, have yielded numerous moa bones.*

received few visitors. In 1948 footprints of an unknown bird were seen in a glacial valley. The following year, to the astonishment of ornithologists, a breeding colony of the large swamp hen *Notornis hochstelleri* was discovered; the last living member of the species had been seen in 1898.

Even more surprising than the rediscovery of *Notornis* was the discovery of a reptile belonging to a group, the Rhynchocephalia, believed extinct since the Age of Reptiles, 65 million years ago. Known to the Maoris as the Tuatara, it was first described in scientific literature in 1831 and given the name *Sphenodon*, but its true significance remained unrecognized until 1867. In former times *Sphenodon*, which looks like a large lizard, was found throughout the North Island and its remains are often found in cave deposits with moa and kiwi bones. Today it is restricted to some 20 off-shore islands.

Many other native animals and plants have ranges which are considerably contracted from what they were in former times, and this is largely attributable to man. European settlers, arriving during the early part of the last century, brought cats, goats, cows, stoats, poplars, willows, oaks, pines, and even gorse and goldenrod. In short, they attempted to create another England in the Pacific, and their success was to the detriment of the native species. Forests and bushland were cleared for cultivation, and those native animals and plants which survived the onslaught be-

*Below: One of the hind legs of the mummified body of the moa* Megalapteryx didinus. *Notice the dried skin covering the foot.*

*Bottom: A Tolkien landscape near Martinborough, North Island. A cabbage tree grows out of the stump of a dead Rimu, which was once part of the native forest cleared by European settlers during the last century.*

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came restricted to a few refugia, mainly in the extreme southwest of South Island.

The effects of European settlement were evident to Darwin, and actually provided him with one of his happiest moments in New Zealand. During a day excursion to Waimate he came upon an English farmhouse with gardens of flowers, hops, asparagus, rhubarb, and other English fare, fields of ripe barley and wheat, a farmyard with its familiar sights and sounds, and even a water mill by a pond. There is a note of nostalgia and wonder in his diary when he described what he had seen as "placed there as if by an enchanter's wand." The works of the enchanter can still be seen today in many parts of New Zealand.

# Recent Publications

**Studies in Textile History in Memory of Harold B. Burnham,** *edited by Veronika Gervers,* ROM, pp. 378, illustrated, $25.00 cloth
This important collection of 25 articles by world-renowned textile specialists presents an international perspective on problems in current textile research. The majority of the contributions concern ancient, in many cases archaeological, textiles, from early China through Pharaonic, Early Christian, and Islamic Egypt, to the Middle Ages north of the Alps. Other articles explore historical or technical aspects of recent ethnographical material. The significance of economic history is demonstrated through an examination of the spread of the cotton plant. Other contributors discuss the art of tapestry, the problems of woven and printed textiles, the invention of specific looms, and aspects of textile conservation and terminology. *Studies in Textile History* will be an invaluable source of information for scholars in many disciplines, from history to art and ethnography. It will also serve as a handbook for people interested in textile craft and design.

**A Gather of Glass: Glass Through the Ages in the Royal Ontario Museum**, *edited by C. Peter Kaellgren,* ROM, pp. 32, illustrated, $2.00 paper
The versatility and unique optical properties of glass have fascinated mankind almost since the beginning of civilization. This general introduction to the history of glass, published to accompany the exhibition of the same name, is an illuminating survey of the development of glassmaking styles and techniques throughout the world. Illustrations of dozens of outstanding pieces from the ROM's collections show the evolution of glass from ancient times to the present.

**Ontario Prehistory Gallery**, *Peter L. Storck,* ROM, pp. 32, illustrated, $1.00 paper
A general introduction to the history of the peoples of Ontario, from the first Palaeo-Indian hunters and gatherers to the time of European contact. Illustrated with photos of many of the artifacts on display in the ROM's Ontario Prehistory Gallery, this brief survey includes a discussion of the fascinating dioramas in the gallery, and looks at some of the techniques used in archaeological work.

**Guide to the Dinosaur Gallery for Teachers and Parents**, *Education Services,* ROM, pp. 16, illustrated, $1.00 paper
This booklet is a display-by-display guide to one of the Museum's most popular galleries. Designed to help adults enrich their children's visit to the gallery, it includes important background information on the Age of Reptiles, thought-provoking questions that can be answered by studying the exhibits, and helpful drawings of the dinosaurs in the gallery.

**Redescription of Type Specimens of Species of the Bryozoan Genera Atactoporella, Homotrypa, and Homotrypella, from the Upper Ordovician Rocks of the Credit River Valley, Ontario, Canada**, ROM Life Sciences Contribution 111, *Madeleine A. Fritz,* pp. 26, illustrated, $1.25 paper

**Apparatus of the Pennsylvanian Conodont Genus Neognathodus**, ROM Life Sciences Contribution 112, *Glen K. Merrill* and *Peter H. von Bitter,* pp. 24, illustrated, $1.25 paper

**Middle Eocene Freshwater Fishes from British Columbia**, ROM Life Sciences Contribution 113, *Mark V.H. Wilson,* pp. 61, illustrated, $3.00 paper

**Ancient Egypt: Gift of the Nile — audio-visual kit**, *Education Services,* ROM, 3 full-colour filmstrips, 3 audio cassettes, teacher's resource book (2 copies), large colour chart of "The Land of Tutankhamen", ROM gallery guide to Egyptian galleries, 2 ROM pamphlets, $60.00
An outstanding introduction to the civilization of Ancient Egypt. The filmstrips, with complementary cassette tapes, portray the daily life of the ancient Egyptians, show how the Nile affected their civilization, explain how hieroglyphic writing is read, examine funeral customs, the pyramids, and mummification, and deal with the 1974 autopsy of Nakht, a young weaver of ancient Thebes. The teacher's resource booklet includes scripts, culture period chart, notes, biographies, and bibliography.

**Introducing the Museum — audio-visual kit**. *Education Services,* ROM, 3 full-colour filmstrips, 3 audio cassettes, teacher's resource book (2 copies), and selected print materials, $60.00
In the first filmstrip students are introduced to the people, functions, and objects found in Ontario museums. In the second, the focus is on the ROM's archaeological materials and social history collections, in such fascinating fields as arms and armour, early musical instruments, sculpture, costumes, writing, and burial customs. The third filmstrip features minerals, geological formations, fossils, vegetation, and animals, and also illustrates the lifestyles of human beings in the western hemisphere from 10,000 B.C. to the period of European contact. The kit can be used either as preparation for a visit to a museum or as a resource motivating students to explore a variety of subjects introduced by the A-V "visit" to the ROM.

# The Growing Collections

This striking object is a three-dimensional *mandala*, or Buddhist "psychocosmogram", of Tibetan silver. A ritual implement, it is used for offerings of rice or other grain to the Four Directions and appropriate Lamas, Buddhas, Bodhisattvas, etc. The offerings are accompanied by incantations, having as their object the accumulation of merit (in the philosophical sense, or of blessings in the popular sense) and of ever greater transcendent awareness and insight.

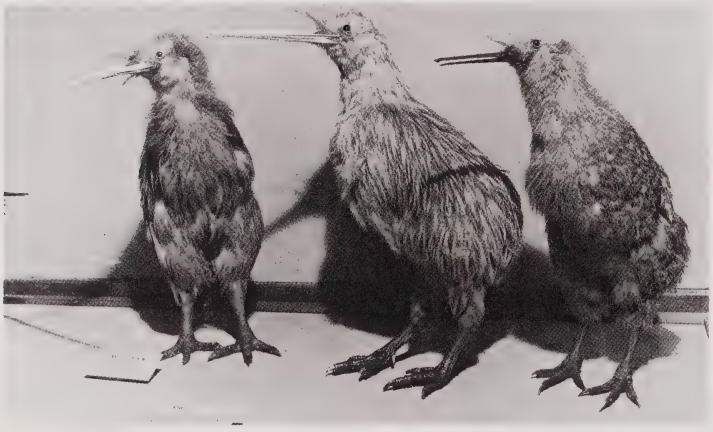
The *mandala* has rich repoussé and engraved surfaces and is in five parts: a base showing the Seven Possessions of the Cakravartin (Spiritual World Ruler), three free rings of diminishing size, and a finial showing the Wheel of the (Buddhist) Law, supporting and supported by rice.

A recent and anonymous gift along with the equally rich but less puzzling portable shrine, the "rice *mandala*" was probably made in eastern Tibet about 1900. D.J.D.

A recent donation in the form of an Asmat ancestor pole has been made to the Department of Ethnology through the generosity of Mr. & Mrs. (Dave & Jean) Eadie.

The ancestor pole, referred to by the Asmat people of Irian Jaya, Indonesia, as a "Bis" pole, is carved from a single mangrove tree. The carving of the "Bis" pole is undertaken by master carvers known as "Wow-ipits", and is initiated by important members of the community to avenge the deaths of their ancestors. The Asmat believe that death is an unnatural event caused by an enemy, through magical processes or in battle. The "Bis" pole serves as a visible sign of this commitment for revenge. Once decorated, the pole is displayed in front of the "Men's House," where a ceremonial feast is held and a mock battle is staged. After some time the poles are left to decay in the sago forests in hopes that the supernatural power of the pole will protect and promote the growth of the trees which are the staple food of the Asmat.

The ancestor pole which has been donated to the Ethnology Department is decorated with lime and paint. The carving depicts three human male figures, one with a phallic pennon extension with carved designs symbolizing the life principles of food, fertility, and headhunting. This "Bis" pole, made between 1960-1976 measures 3.73 metres, and is the first specimen of its type to be acquired by the Ethnology Department. M.T.



The Ornithology Department received a significant acquisition of four frozen kiwis from New Zealand in June. Kiwis are small, flightless birds with nostrils at the tip of the bill. They have only rudimentary wings, and very primitive, coarse feathers. The acquisition was negotiated by Dr. C. McGowan of the Vertebrate Palaeontology Department when he was in New Zealand on sabbatical. The kiwis will be used for a joint study between the Vertebrate Palaeontology and Ornithology departments, who will examine the musculature and skeletal systems of these specimens for clues to the evolution of flightless birds. A.J.B.

Additions to the mineral collections in recent months include several TYPE specimens. These represent part of the original materials that were used to describe and define the species and are therefore of the utmost importance for future reference. We are most grateful to our generous colleagues who have seen fit to deposit part of their TYPE material at the Royal Ontario Museum. The new TYPES are: satterlyite, Yukon Territory (described at the ROM and named in honour of Dr. Jack Satterly, a Research Associate in the Department of Mineralogy and Geology at the ROM); liddicoatite, Malagasy Republic, and hydroxyapophyllite, North Carolina (both described at the Smithsonian Institution, Washington, D.C. and presented by Mr. Pete Dunn); genkinite and platarsite, Republic of South Africa (described at CANMET, Ottawa and presented by Dr. L.J. Cabri); arsenopalladinite, Brazil (described jointly by CANMET, Ottawa, and the British Museum (Natural History), London, England; the specimen was presented by Dr. A.M. Clark of the latter institution); leiteite, Tsumeb, South West Africa (presented by Mr. Luis Teixeira Leite, for whom the mineral was named); and černýite, from two localities, Manitoba and South Dakota (described at Lakehead University and presented by Dr. S.A. Kissin).

Species not previously represented in the collections are: cuprostibite, Greenland; galkhaite, Nevada; carlfriesite and tlacocite, both from Mexico; althausite, Norway; blixite, Sweden; senegalite, Senegal; glaukosphaerite, Zaïre; fukuchilite, kinoshitalite, bicculite, and sugilite, all from Japan; murataite, Colorado; kidwellite, Arkansas, and charoite, USSR.

The lapidary part of the collections has been enhanced by the acquisition of 18 polished spheres made from Canadian materials. The spheres range from 3 to 8 cm in diameter; most of them are about 7 cm. They were cut from the following minerals and rocks: albite (var. peristerite), jasper conglomerate, rose quartz, amethyst, microcline (var. amazonite), serpentine, scapolite (lilac colour), feldspar and epidote ("unakite"), calcite, cancrinite and sodalite (together in one sphere), green aventurine and porphyry, all from Ontario localities. There are two agate spheres from Nova Scotia, sericite ("wilsonite") and scapolite (var. wernerite) from Quebec, and rhodonite from British Columbia. R.I.G.

Painted in India, this miniature illustrates the popular Persian story of the hero Rustam lifting the colossal stone off the well in which Bizhan has been thrown by the evil Div Akhvan. Indo-Muslim painting was highly influenced by Persian tradition although here the Indian taste for greater naturalism in representation is evident. The painting was probably done in the 18th century. L.G.

# Indians and Anthropologists

## *Contention or Cooperation?*

**E.S. Rogers**

*The Ethnology Department of the Royal Ontario Museum has been conducting research for two decades among the "Round Lake" Ojibwa residing in the village of Weagamow in northern Ontario. The illustrations accompanying this article were taken in the course of this research.*

*Above: Joseph Sakchekapo checks beaver snares.*

*Opposite page: John Sakchekapo prepares a canoe paddle.*

For nearly a century the Indian cultures of North America have been the subject of anthropological study. For most of this period no question has been raised about the legitimacy of such studies, but in recent years the Native peoples have begun to voice their opposition to the intrusions of anthropologists into their lives and those of their ancestors (see Deloria 1969: 78-100; Johnston 1977: 173-175). Grand Council Treaty #9, representing the Native people of northern Ontario, an area encompassing nearly a third of the Province, has made its position clear. On March 12, 1973, in a memorandum entitled "The Structure and Position of Grand Council Treaty #9," Mr. Andrew Rickard, president of the Council, wrote:

> We do not want any studies in our Native Communities that will *solely* benefit *non-native interests*. Before any anthropologist or other similar group contemplates visiting one or more of our communities for the purpose of studying our people, we ask that the Executive Council Treaty #9 be consulted prior to the visit.

In this statement Mr. Rickard was voicing a concern that has been growing for some years in the minds of Native people, and the strains that have developed in the relationship between anthropologists and Indians as a result of this concern have reached the point at which field work is becoming

difficult and sometimes impossible to pursue. When it is undertaken, it is liable to lead to increasing mistrust and even to confrontation. Demands are now being heard for stricter regulations to control anthropological investigation, and such regulations may well be needed. But before introducing new regulations we ought to be sure that the existing ones are being heeded.

One of the grounds on which the work of ethnologists with living peoples is being attacked by Indians and their organizations is that it constitutes unethical interference in people's lives. Yet it is probably very little known that agencies funding any research that involves "human subjects" have for some time been adopting measures to deal with these ethical issues, in order to safeguard the rights of the individuals from whom data for the research must come. Such research can now be carried out only with the voluntary participation and full knowledge of the people concerned. Furthermore, the anthropologists' own professional organizations have in the past few years established "ethics committees" for self-regulation, to which grievances can be presented. It seems, however, that the existing controls have been too little or too late, in the case of the Native people of North America, to bridge the gulf that ever widens between the anthropologist and the Indian (see Freeman 1977: 71-75). Though there is no single or easy solution to the problem, a clarification of certain matters should be of some help in finding a solution that will preserve the legitimate interests of both sides.

First, there is the question as to exactly what an anthropologist is and what he does. The word *anthropologist* often conjures up different images for different people. Among Indians, any interloper into an Indian community who is bent on securing information about the people is often believed to be an "anthropologist." Among non-Indians, any recorder of exotic behaviour and customs of non-European peoples, especially those living in remote and romantic parts of the world, is likely to be regarded as an "anthropologist." Though there is excuse for such misconceptions, both views are wrong.

Briefly, an anthropologist is one who has been fully trained in the scientific discipline of anthropology (or "the study of man") and is thereby qualified to specialize in one of several different approaches to the study of human cultures, past or present. In general, he uses techniques that are distinct from those of other disciplines that investigate the behaviour and the events of man, such as history, sociology, economics, psychology, and human geography. Within the discipline of anthropology, there are four main areas of specialization: archaeology, physical anthropology, linguistics, and ethnology. As a rule, an anthropologist concerns himself mainly with just one of these areas. So the term "anthropologist" by itself does not tell much about a person's particular field of study.

Anthropology is not simply descriptive; as in any science, the field worker obtains his data ultimately for comparative purposes with a view to the formulation of general laws. Also, it is not confined entirely within the ivory tower of the analyst but sometimes finds practical applications — in community development or economic aid programmes, for example. Thus there are many varieties of "anthropologist," and it is no wonder that people are apt to mistake the kind of work that an anthropologist does. They also are apt to misapply the word "anthropologist" to workers who are not anthropologists at all, but whose professional interest in noting a people's ways and histories arises within some other discipline. As for the notion that anthropologists collect data only from "exotic" (non-Western) or "primitive" (technologically simple) peoples, this is certainly belied by the fact that probably most anthropological studies today are focused on urban or industrialized societies, including the anthropologist's own.

While the following remarks apply in general to the problems encountered in the relationship of Indians with all the different kinds of anthropologists, our specific concern here is with ethnological researchers. This is probably the most sensitive area, since it involves primarily research into the ways of life of people now living.

There is little doubt that some ethnologists have been insensitive to the desires and wishes of Indians regarding research into their lives. In some instances, field work, which frequently necessitates rather long periods of time in close association with the people of a particular community, has been improperly initiated, perhaps without the prior consent of the people concerned. The obtaining of consent requires discussions not only with the chief and council of the community selected for possible study, but also with regional organizations of which that particular community may be a part. Furthermore, if the people are not told beforehand exactly what the research will entail, what information will be sought, and why, it may very well be felt that unethical deception is being practised.

Again, insensitive ethnologists have sometimes attempted investigation of topics that the Indians feel are not for the eyes and ears of outsiders or of the uninitiated, such as traditional religious practices. Such probing by ethnologists has led to the disclosure of privileged information, to the embarrassment of the Native people, especially the individuals who up to that point had been hospitably wishing to cooperate. Another aspect of field work is that it can seem like a one-way street: the Indians provide everything—information and hospitality—but the ethnologist gives nothing equivalent in return.

Field work is not the only cause of difficulty. Sometimes ethnologists are the custodians of the material possessions of the Indians' ancestors. The legal and moral right of museums to retain such artifacts is now being questioned by the Native people. In 1971, at the second Indian Cultural Conference held at

Kamloops, B.C., the Native people of Canada passed the following resolution:

> This conference calls upon the several museums of Canada as well as the storerooms of the Department of Indian Affairs to examine their Indian artifacts for the purpose of restoring these relics to their rightful owners if it be found that these were wrongfully acquired.

Only recently have museum ethnologists begun to pay heed to this request. They have not, however, made sufficient effort to sensitize museum administrations to the rightful place of Native people within the world in which we all live. Museum collections of ethnological materials are not the private preserve of Western society to be retained solely for the gratification of its members, no matter how these items are presented to the public. Pending a general solution of the problem, Indians are exerting pressures, forcing museums to accede to their demands for the return of artifacts (e.g., see *The Indian Historian* 1970: 4-18).

Field work and the management of museum collections are only two of the areas in which ethnologists have been at fault in their dealings with Native people. There is also the fact that until recently they have not made a practice of sending copies of the results of their studies to those whose culture has been the object of the work, although in a few instances reports have been specially prepared for their reading, for example, by translation into Cree syllabics. However, the situation is changing and today ethnological publications are being consulted by Native peoples for a variety of purposes.

These strictures concerning the

*Pat Okemawenene checks a gill net.*

behaviour of ethnologists may sound harsh but they can be supported by case histories, and they provide justification for the Indians' stand against the intrusions of anthropologists into their lives. On the other hand, the Indians must not be under the impression that professional anthropologists are lurking everywhere. Failure to distinguish the professional anthropologists from other researchers and inquirers has led the Indians to assume that they are being forever pestered and over-studied by "anthropologists." As a matter of fact, most Indian communities in Ontario have not been the object of any anthropological inquiry. Only three or four of the hundred or so communities in this province have been subjected to rather intensive scrutiny by ethnologists and their students. There are at present too few ethnologists interested in conducting field work in Ontario for any of these communities to expect to be invaded at any time in the near future. And because of the strains that have developed between Indians and anthropologists, many ethnologists are now forgoing the study of Indian cultures and are doing their field work elsewhere. A number of them are now joining those who are investigating urbanized and industrialized societies; some even are making studies of anthropologists!

On the more positive side, Indians are now recognizing that ethnological field work may be of use to them and are hiring ethnologists to solve certain problems, notably land claims. Furthermore, Indians have called upon ethnologists, because of their knowledge of Indian history and culture, to testify on their behalf in certain cases of litigation. Finally, some of the Indian youth have become interested in anthropology to such an extent that they are attending universities for training.

While the Indians are aware to some extent of the benefits of applied research, pure research is still viewed with mistrust. But any research into the lives of the Native people, whether pure or applied, calls for an examination of the manner in which such field work is undertaken. No longer can ethnologists assume, as they sometimes have in the past, that they have the right to conduct research whenever, wherever, and however they want. Society (not just the Indians) has now decreed otherwise. Some regulations now exist to try to guard against the kind of abuses cited earlier. The Committee on Ethics of the American Anthropological Association has been established to maintain a watchful eye over the activities of ethnologists, and ethical considerations must be given top priority if ethnological research is to continue to be carried out. The ethnologist can no longer remain independent in the conduct of his work or isolated from the current controversies engaged in by the Native people

*Isaac Kanate and his daughters prepare moose hide.*

with government and industry. Field work may well be, at times, essential to a just resolution of disputes concerning such matters as land claims, mercury pollution, treaty rights, etc. Whatever their involvement, professional ethnologists must maintain a scientific objectivity in presenting their data. If they fail to attain a sympathetic understanding of the problems (and sentiments) involved and some form of equitable work relationship with the Native people, ethnologists, especially those assisting government and industry, will find themselves under even heavier attack than at present.

The problems remain formidable. Some Indians can see no justification whatsoever for investigations of their history and culture by outsiders, but the discipline of anthropology is not going to disappear in the foreseeable future. American Indian social and cultural systems have constituted an important part of the comparative data on the world's cultures. If they are going to continue to be included in the future, an attempt must be made to find ways of solving the impasse described in this article. The proliferation of regulations imposed by outside bodies is unlikely to present a workable solution, but will in the end impair the freedom of both Indians and ethnologists to work together.

Consultation between ethnologists and the Native people is essential in order to create understanding and dispel misconceptions on both sides. Consultation is most likely to be productive if it is informal; formally organized meetings often inhibit frank discussion and encourage the polarization of positions for political reasons. Yet consultation cannot take place unless both parties want to participate of their own free will and are ready to listen to each other with open minds.

In the meantime, observance of the courtesies of normal social relations is the very least that the Native peoples have a right to expect. The obtaining of permission for research from the members of the community and from the regional organization, if one exists, is one such courtesy. It is also an essential prerequisite of any field work. If an ethnologist (or anybody else) on a reserve does not obtain permission for his activities from the chief and council, he can be charged with trespass under the Indian Act and removed from the community. In seeking permission, he should provide as much detailed information as possible about his project so that the people of the community will be fully aware of what they are getting into and can make an informed decision whether or not to accept the ethnologist and his research. If permission is granted, the community should be informed periodically of the progress and results of the investigation. Finally, copies of all reports and publications based on the field work should be submitted to the community studied.

Although the above remarks may seem simple-minded, anthropologists frequently forget to follow such rudimentary rules of common courtesy. One might make further suggestions along these lines, but in the end it is the Indians themselves who can articulate most clearly the contentious issues raised by ethnological field work as a basis for discussion with the anthropologists. It is to be hoped that they will desire to do so and will allow the scientific investigations to proceed, in the quest for results that will benefit all mankind.

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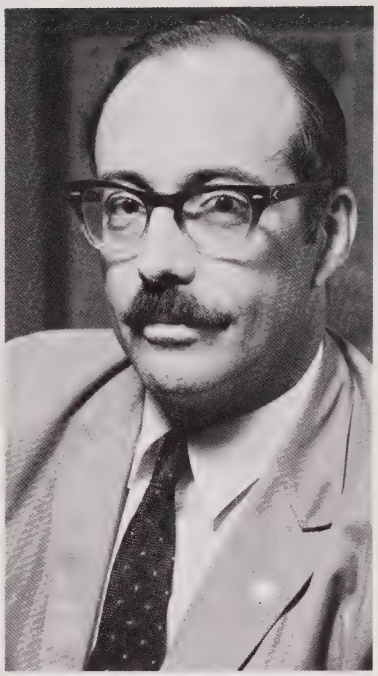


*E. S. Rogers was born in Lee, Massachusetts, graduated from Middlebury College, and did his graduate work at the University of New Mexico. During this period, he conducted archaeological surveys through Quebec and field work among the Mistassini Cree and Mescalero Apache. He joined the* ROM *in 1958 to initiate ethnographic field work among the "Round Lake" Ojibwa of northern Ontario. In recent years the scope of the study has been widened to include ethnohistorical investigations. In between work with the "Round Lake" Ojibwa, research has been conducted into the past ways of life of the Parry Island Ojibwa.*

# Treasure in the Rocks

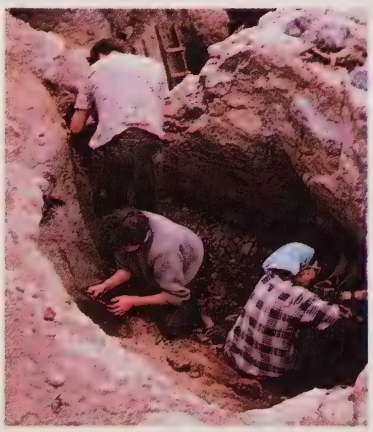
## *Collecting Gemstones in Ontario*

**M.L. Scheffel**

With the exception of a few organic substances, such as amber, coral, jet, and pearl, all gemstones belong to the mineral kingdom and are found in the earth's crust. Minerals are chemical elements or compounds that occur naturally and are formed by inorganic action. There are more than 2,000 mineral species recognized throughout the world, but only a few of them yield gemstones.

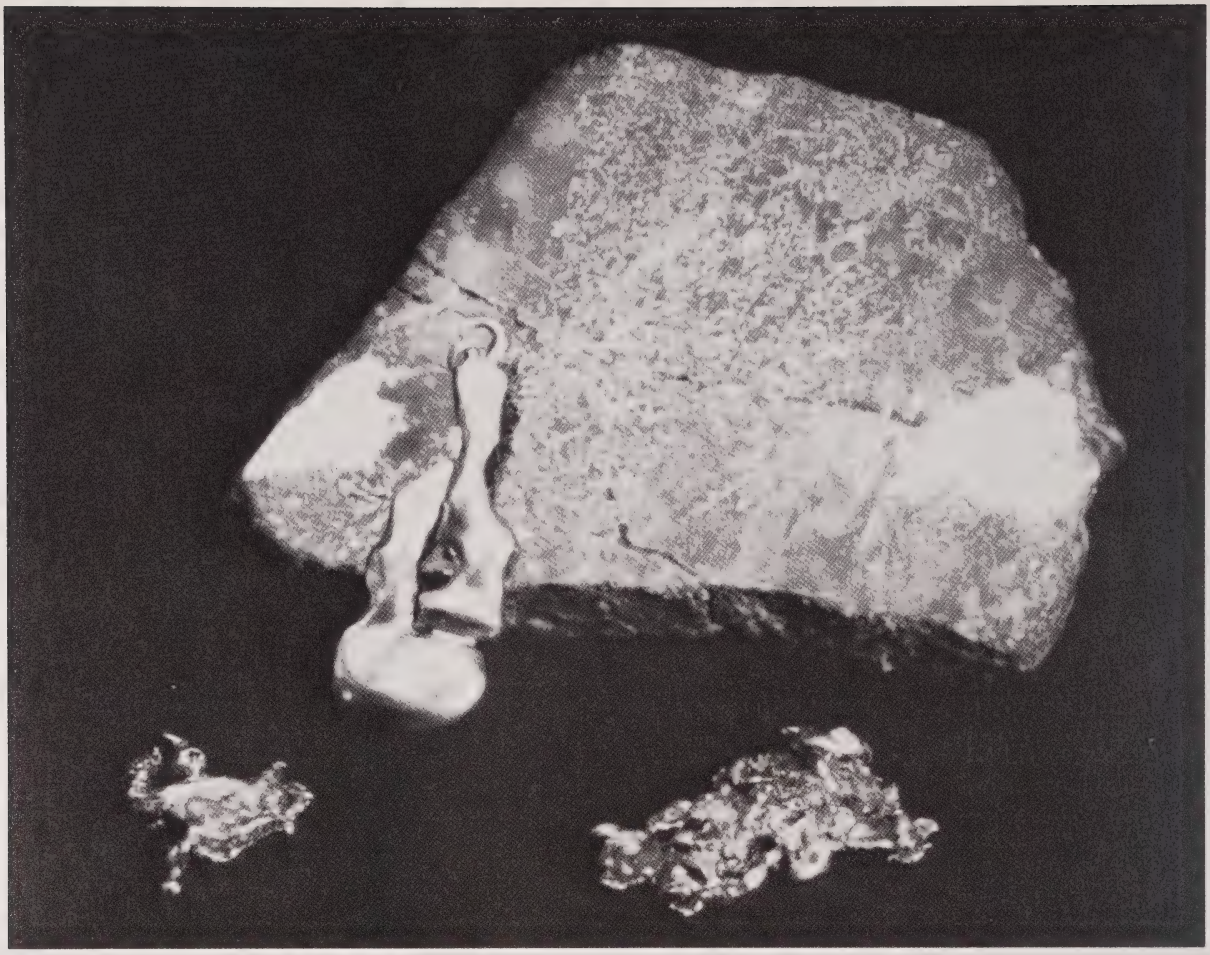
Under suitable conditions, a mineral will develop a certain characteristic molecular structure in its crystalline form, as well as other physical properties. However, in order to be a gem it must have a number of specific qualities. It must be rare and flawless and must exhibit beauty of colour. Its dispersion of light must be high so that it will give brilliancy when cut, and above all, it must be hard and durable.

As a rule, pieces of flawless gem rough are reserved for faceting. The term "faceting" denotes a cutting process by which small plane surfaces, or facets, are formed on the gem rough in such a manner that the finished stone will reflect the maximum amount of light. Opaque minerals or minerals with inclusions are usually cut *en cabochon*. This term has been adapted from



*Right: Members of the Walker Mineralogical Club of Toronto digging for amethyst crystals at Loon Lake near Thunder Bay.*

*Opposite page: Amethyst from the Thunder Bay area. Small, dark-purple crystal groups are ideal for setting into jewellery and are used frequently by amateur lapidaries.*



*Smelted silver from Cobalt is often used to create attractive and unusual jewellery.*

the French word *caboche* and is used to describe stones cut with a dome-shaped surface.

Though Canada lacks gem deposits like those of Africa, Australia, Burma, Ceylon, South America, and Thailand, this lack of precious stones is more than compensated for by an abundance of opaque minerals suited for lapidary uses. When properly cut and polished, many of these minerals have unrivalled beauty.

The popularity and continued use of many of these materials can be attributed directly to the perseverance of the amateur mineral collector and lapidary, who spends most of his spare time searching for crystal specimens and for lapidary materials. According to the publication of the Geological Survey of Canada *Introductory Notes on Rock and Mineral Collecting*, there are 89 mineralogical societies in Canada, 32 of them in Ontario. These organizations cater to enthusiasts of all ages and from all walks of life. The requirements for joining are simply an appreciation of and interest in nature and an urge to dig and explore.

Before 1963 Toronto had only one mineralogical club. Now there are seven such organizations in the city. On summer weekends, there is a great exodus of mineral collectors to the various parts of the neighbouring countryside where interesting minerals can be found. Every road cut, river bank, quarry, old mine tip, and rock outcrop is thoroughly investigated. The recovery of minerals is often an arduous task. Some are collected by digging deeply into old mine tips;

*Thomsonite from Lake Superior shown in matrix and as polished nodules, emphasizing the characteristic "eye" patterns.*

others have to be chipped out of the rock into which they have crystallized, or pried loose from huge boulders. This may sound like a strange way to spend weekends and holidays, but it is a healthy and relaxing occupation and it has become one of the fastest–growing pastimes both in North America and in other parts of the world. Ontario's rich mineral resources are, of course, a leading factor in the growth of the hobby throughout the province.

Lake Superior agates have delighted the amateur lapidary for many years, and to this day hundreds of collectors flock annually to the shores of this great lake in the hope of finding some of these elusive stones. The agate has a characteristic red or reddish-brown background with fine grey or white banding and is very distinctive and striking in appearance. The best place for collecting them is Michipicoten Island, where some superb pieces have been recovered. Several beaches along the northern shores of the lake yield water-worn agate pebbles, mostly of small size. Occasionally a collector is rewarded by finding larger agate pebbles in the gravel beds of the old raised beaches.

Another attractive and unusual mineral found in the volcanic rocks of this region is thomsonite. Small to medium nodules of thomsonite fill gas vesicles in the lava rock. When pried loose, cut, and polished, they exhibit fine "eye" patterns and are in high demand as jewellery material. Since the patterns vary throughout the nodules, the cutter has to be careful when

*Above: Amazonite feldspar from the Canadian Beryllium Mine — East Quarry, near Quadeville, Ontario. Amazonite is widely used* en cabochon.

*Right: The Bancroft feldspars occur in a variety of colours and yield popular cutting rough, as well as crystallized specimens, often of large size.*

*Opposite page: Sodalite from the Princess Sodalite Mine near Bancroft has always been a favourite with mineral collectors and cutters.*

*Occasionally flawless quartz crystals from Black Rapids near Kingston have been faceted.*

grinding and shaping the rough or he may lose much of the desired "eye" patterns.

Within the last few years the area around Thunder Bay has become very well known for its extensive amethyst deposits. Although most of the amethyst is used for building decorative walls and fireplaces, the better-quality specimens with good colour and crystal formation are reserved for collectors. Small dark crystal clusters are frequently set in gold or silver jewellery and have also become extremely popular for setting in goldwire jewellery. Demand for the local faceting-grade amethyst is high. It is usually found only in small quantities, and supplies diminish quickly.

In 1903 Cobalt rose to instant fame when two railway contractors, J. H. McKinley and Ernest Darragh, discovered silver while searching for timber needed for railway ties. The rock samples they collected and submitted for analysis were assayed as native silver, 4,000 ounces to the ton. They staked claims, applied for a government mining lease, and constructed a small plant. Eventually this claim became known as the McKinley-Darragh Mine. Additional deposits of incredibly rich silver ore were discovered, staked, and mined and Cobalt became justifiably known as "the town with the silver lining." To this day, this hospitable town with its glorious mining history holds a special fascination for the mineral collector, who can occasionally still find the odd specimen of native silver on the old mine dumps around the area. However, the highly prized dendritic silver, in great demand by the lapidary, is extremely hard to find though specimens can still be purchased from local mineral dealers. When cut and polished, dendritic silver will render a stone quite unlike any other. Lately, smelted silver from the refinery has become popular for jewellery. The unusually shaped nuggets can be set into cufflinks, rings, and pendants in their natural state without further processing.

Bancroft, approximately 150 miles north of Toronto, ranks with-

out dispute as the most popular collecting area in Ontario. This region is world-famous for its unique mineralization, and it draws thousands of collectors yearly in the search for crystallized specimens and lapidary minerals. Sodalite is unquestionably the best-known cutting material from the area. At the Princess Sodalite Mine, 2.4 miles east of Bancroft on Highway 500, sodalite has been commercially mined since 1893. The mine acquired its current name in 1905 after a visit by the then Prince and Princess of Wales. Both were presented with samples of this attractive blue mineral, and they were so intrigued by its beauty that they commissioned a shipment of 130 tons. The order was completed in 1906 and the sodalite was used for decorating Marlborough House. Unfortunately, since those early days of glory, the occurrence of the mineral has grown rather sporadic.

Peristerite feldspar is another very popular cutting material from the Bancroft area. When properly oriented and cut, it exhibits a remarkable play of colour ranging from pale blue to green and gold. This effect is caused by the presence of small lammellar inclusions.

In the same district, at York River and near Davis Hill, blue and black corundum crystals are embedded in syenite rock. This mineral is extremely hard, and patience is required by the cutter during the grinding and polishing process. Some of the Ontario corundum is penetrated by minute inclusions along the axial direction of the crystal. When the crystal is properly oriented and cut on the vertical axis, the finished cabochon should exhibit a six-rayed star effect.

The village of Quadeville, approximately 40 miles north of Bancroft, is well known as the location of the Canadian Beryllium Mine — East Quarry, where beryl is found along with a host of other minerals, some quite rare. This location also provides fine peristerite as well as the green feldspar-amazonite for lapidary uses. The Canadian Beryllium Mine — West Quarry, on the other hand, produces rose quartz. The quarry is still worked commercially and the rose quartz is used for decorative walls and fireplaces. Rose quartz is also used for jewellery, and some material has produced fine six-rayed star stones.

Roughly two years ago, the Tory Hill area, west of Bancroft, earned its share of publicity for the clear green apatite crystals recovered there. The apatite has been faceted into very attractive stones, but unfortunately its application in jewellery is very much restricted because of the softness of the mineral.

Several occurrences of serpentine are located in the vicinity of Madoc. Occasionally green serpentine is cut and used in jewellery by amateurs, since the finished stones look very much like nephrite jade. The difference between these two minerals can be established quickly by a hardness test. Serpentine is quite soft and can easily be scratched by a knife. When used in jewellery, therefore, the stones soon become abraded, worn, and dull.

The quartz deposit at Black Rapids near Kingston was mined extensively during World War II. The rock crystal was used for radio and radar equipment. Flawless pieces of rock crystal have been faceted, and though it is an inexpensive material, the faceted stones are attractive in appearance. Occasionally specimens of rock crystal are still recovered and can be purchased from the current property owner.

The places mentioned in this article are only a few of the better-known mineral collecting areas in Ontario. There are scores of others, equally productive. The richness of the province's mineral resources make it a paradise for the mineral collector and the lapidary, and it is safe to say that the growth of mineral collecting as a hobby and of the organizations devoted to fostering it will continue unabated in the years ahead.

*Melita Scheffel joined the staff of the ROM in 1963 and is now Secretary of the Far Eastern Department. From 1964 to 1971 she worked on the "Crown Jewels of Iran" project and for the next two years was active with the Saturday Morning Club. Mrs. Scheffel is a member of several mineralogical and gemmological associations and the 1976-1977 Programme Director of the Canadian Gemmological Association.*

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